

SHIP'S COOK 3c AND 2c

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PREPARED BY
STANDARDS AND CURRICULUM DIVISION
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PREFACE

This book is written as an aid in the preparation of men for promotion to the ratings of Ship's Cook third class and second class. It is realized that nothing can take the place of practical experience in the galley, bakery, and butcher shop.

The book is designed to cover the qualifications of Ship's Cook third class and second class; and the qualifications in turn have been determined from the actual "on board" analyses of these rates. The necessary qualifications for these rates, in accordance with Part D, Chapter V, Section 2 of the Bureau of Naval Personnel Manual, are included in the Appendix at the back of this book. Since the examination for promotion to the Cook's rates will be based exclusively on these qualifications, it is suggested that men refer to them frequently for guidance.

This book begins with the organization and regulations of the general mess. It follows with a discussion of the proper handling of provisions from the time they come aboard until they are used. It includes inspecting, storing, issuing, cooking, baking and serving. Wherever applicable, problems in arithmetic are explained and illustrated. The essential equipment in galley, bakery, and butcher shop is both pictured and discussed. Discussions of safety precautions in the use of the equipment, of menu planning, and of the cutting of meat are important parts of the text material. The book concludes with a treatment of the prevention of food poisoning, and a description of landing force cooking.

As one of the NAVY TRAINING COURSES, this book represents the joint endeavor of the Training Courses Section in the Bureau of Naval Personnel and of those Naval Establishments specially cognizant of the technical aspects of Ship's Cooks' duties.

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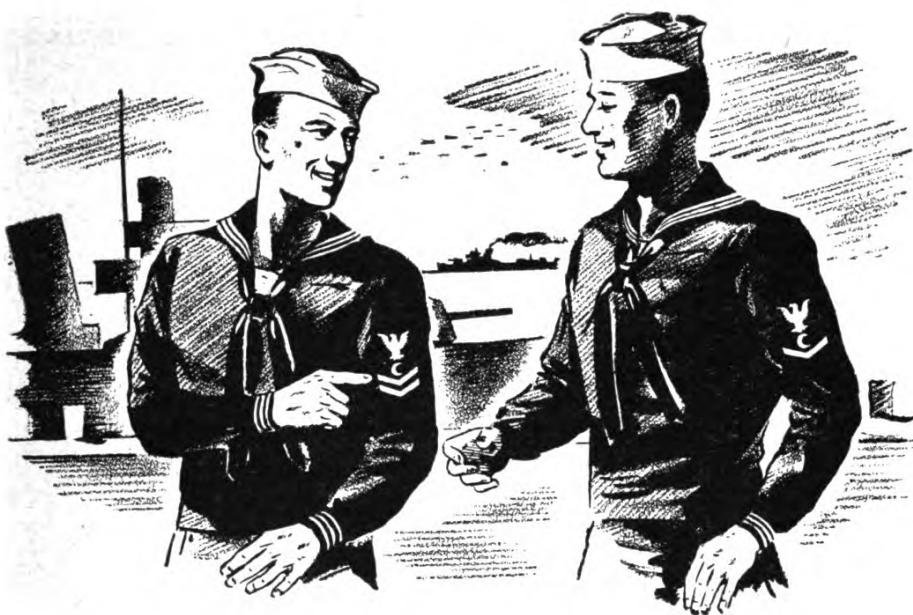
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SHIP'S COOK 3c AND 2c



CHAPTER I

FOOD FOR THOUGHT

CALL FOR CHOW

The morning is cold, damp, and misty. The men are grumbling and growling as they slide out of their sacks and hit the deck. "What a lousy day."

Then comes the call to morning chow. Steaming hot coffee, delicious fried ham and eggs, and toast covered with golden butter. In other words, a good, hot breakfast. Now where is all that grumbling? Gone with the first cup of coffee. And, who drove it away? The Ship's Cook, of course!

In fact, a good Ship's Cook can actually change a poor crew into a good one. He can do more to raise the morale of the crew than any other one person.

Everyone knows that men who are healthy and happy do a much better job than those who are sick and sad. And what makes men healthy and happy? Good, tasty food! Sure, there are other things, but food is of PRIMARY importance in keeping men fit, and willing and able to work. Remember that old

adage "the shortest way to a man's heart is through his stomach". Well, it's true, and his feelings and desire to work are affected, too. A good Ship's Cook is worth his weight in gold.

This book can help you learn many of the things a good cook should know. It can help you to qualify for Ship's Cook, 3c or 2c, and to get the increase in pay that goes with each rating. But, neither this book, nor any other book can teach you how to cook or bake. You have to learn to cook by cooking, and to bake by baking. In the back of this book you will find the qualifications for your ratings as set forth by the Bureau of Naval Personnel. Meanwhile, just take a look at what you have to do and know.

SHIP'S COOK THIRD CLASS

In the first place, you are expected to know how the general mess is set up—who is in charge, how it is organized, and the daily changes that occur.

You should know the classes and groups into which foods are divided, and what each kind of food is good for. Knowing your vitamins is especially important. But merely knowing these things is not enough. You must be able to put what you know to good use. For instance, you should be able to make out a menu for one week showing that you know enough to feed the men the right amounts of meat, fruits, and vegetables.

You must know how to get the provisions you may need, and the regulations for taking these provisions from the storeroom.

You should know what to do in order to keep the food pure and clean from the time it arrives aboard ship until it is served to the men. This includes knowing how to care for refrigerators, vegetable lockers, and any other storage devices you have aboard your ship. This includes, too, special care required to prevent any possible spoiling of the food.

You should be able to cut meat for different uses. To do that, you will have to tell the names, locations, and proper uses of the various cuts of beef, veal, lamb, and pork.

You must be able to take your place in a galley watch. This means knowing how to start, operate, secure, and clean the galley range. The same is true for all the mechanical tools such as meat grinders and potato peelers that you have in your galley.

Finally, you should be able to cook. And cooking requires a familiarity with standard Navy recipes as given in the *Navy Cook Book*. An examining board might ask you to prepare, cook, and serve any four dishes. These dishes include vegetables, meats, and desserts. So, you will need a little practice.

SHIP'S COOK SECOND CLASS

In order to get your second class rating, you must know more about your job than you did to get your third class rating. In addition to showing that you can make out a bill-of-fare, you must prove that you are able to figure out how much of each kind of food should be ordered and how much money the food will cost. Here you'll use a little arithmetic, but not too much. It is important to know something about the Navy ration, surveys, and sales to messes. You must also be able to supervise the delivery, inspection, and storage of provisions and fresh meats. And you must know how cold the storage rooms need to be kept for different kinds of provisions as well as how long these different provisions can be stored without spoiling.

LEADER OF MEN

And remember, there are some things every petty officer is supposed to know and be able to do. These are not specific duties of your rating, but are require-

ments for all petty officers. A petty officer should be able to take charge of a group of men. He is expected to be able to show men under him how the work must be done. He should be able to conduct drills and physical exercises. He should know a little about first aid. He must be qualified to handle simple arithmetic. He should know what is expected of him in helping to maintain order ashore and afloat. He should have some idea about how to assist with damage control. Such information is given in the *General Training Course for Petty Officers 3c and 2c*. These factors are mentioned here so that you will keep in mind some of the specific responsibilities which you have as a petty officer. Look at the petty officers around you. Learn to do what the best of them do.

And now for the organization of the mess.



CHAPTER 2

THE GENERAL MESS

TEAM MATES

Remember when you used to play baseball in the neighborhood alley, vacant lot, or pasture? You didn't always have exactly nine players to make up a team. But everybody played. If there were not enough in the gang, each guy covered more ground and played more positions. If there were too many, each of you covered less ground. Very likely you had to make daily changes in the rules in order to make a satisfactory game.

The job of feeding men aboard ship works out pretty much the same as your sandlot baseball. Most of the rules and regulations are laid down for the largest ships with a full complement of men aboard. On a small ship where there aren't so many men, one man will have to cover more territory. Maybe your ship isn't large enough to have a supply officer. In that case the commanding officer—your skipper—will have to take over more duties. Maybe there isn't a chief commissary steward aboard. The senior Ship's

Cook may have to cover this additional territory. Possibly a Ship's Cook, second class, is in charge of feeding the men on your ship.

The object of your team aboard ship is to score victories over the enemy. And your part on the team is to get the men fed properly so they can do their work well together. There are some high ranking officers on your team. True, they are coaching on the sidelines much of the time. That's big league stuff. Yet, Navy Regulations put certain responsibilities upon these officers and you must help them meet those responsibilities. You'll want to know what the responsibilities are so you can better appreciate your own part.

Your team's coaching staff consists of—

The Commanding Officer, or Skipper, who is the manager.

The Executive Officer, or assistant manager.

The Medical Officer, as the trainer.

The First Lieutenant, or grounds keeper.

The Master-at-Arms, or assistant grounds keeper.

The Supply Officer, or coach.

The Commissary Officer, or assistant coach.

The Chief Commissary Steward, or field coach.

Figure 1 shows you how the staff lines up.

Notice that the executive officer is responsible directly to the commanding officer. The first lieutenant, supply officer, and medical officer work under the executive officer. And the chief commissary steward answers directly to the supply officer. Aboard ship, the master at arms is under the first lieutenant. At shore stations, he is responsible to the supply officer.

What does this coaching staff do?

THE MANAGER

The COMMANDING OFFICER sets the hours of messing since he is responsible for both the ship's require-

ments and the readiness of the crew. Only in an emergency may the O.O.D. change the time for chow and then he must immediately notify the commanding officer of such a change.

Everything possible is done to keep the crew from being disturbed during chow. Escorting visitors

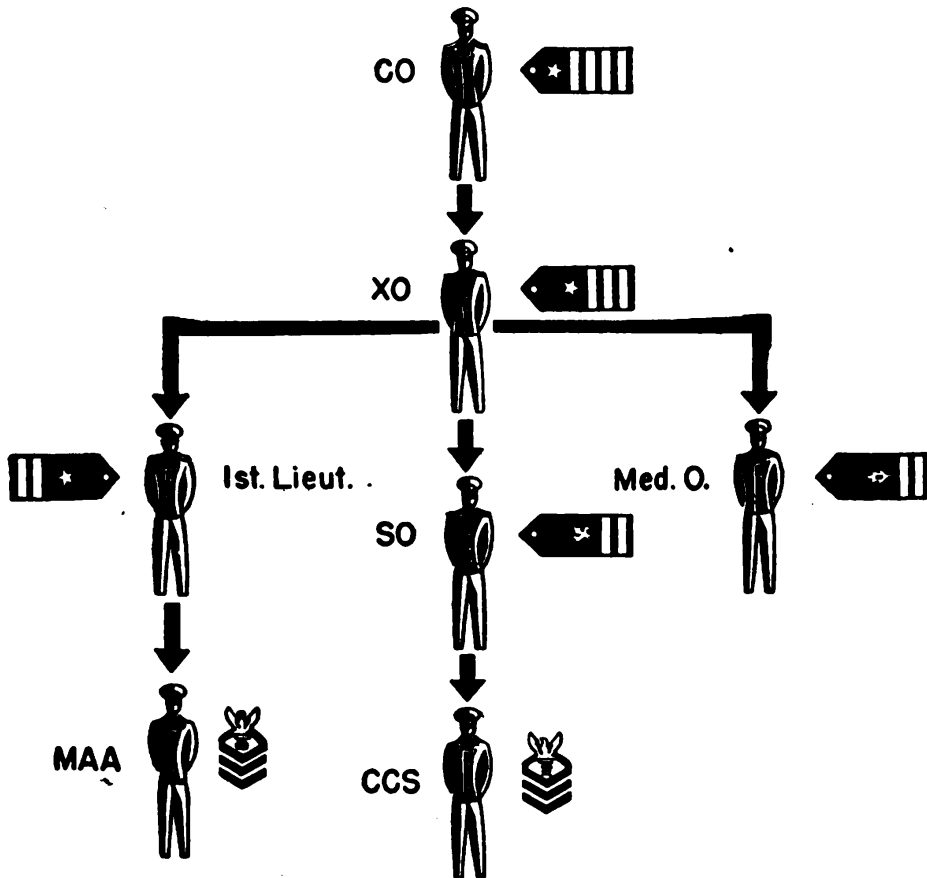


Figure 1.—The line-up.

through the mess quarters while the men are eating is discouraged.

The commanding officer must take the final responsibility for providing good and wholesome food. To help him meet this obligation he makes periodic inspections to see that all cooking and mess utensils are kept clean. He also approves the weekly bill-of-fare prepared by the chief commissary steward.

When there is no supply officer aboard, the skipper also assumes the responsibilities of that officer. Al-

though the commanding officer retains the responsibility, he usually delegates the actual duties of running this general mess to a line officer—usually the first lieutenant.

ASSISTANT MANAGER

The EXECUTIVE OFFICER has general charge of the messing arrangements. He is responsible for getting the mess cooks and one or more petty officers to act as police in supervising their work. These petty officers are known as masters at arms.

The executive officer notifies the supply officer every day of the number of men to be fed so the proper amount of food can be prepared. Men going on special detail or on liberty will decrease the amount of food necessary.

Where cafeteria style is not used, the “exec” also sets up the sub messes. That is, he divides the enlisted men below the rating of C.P.O. into groups of 20 each. Each of these groups eats together as a sub mess. The senior petty officer in each of these divisions acts as captain of his sub mess. As such, he is responsible for the proper behavior of his messmates. He also acts as their spokesman in making complaints or in talking with officers about other matters.

Men going on watch bring up another problem for the executive officer. He may have to make special arrangements to feed these men properly.

TRAINER

The main job of the MEDICAL OFFICER is to see that the men are healthy and full of pep. It is his duty to see that frequent inspections of galley and messing facilities are made, either by himself, a junior medical officer, or a pharmacist's mate. The medical officer must report to the captain if the galley is not as clean as it should be or if he feels that the health of the

crew may be injured in any way by sloppy or careless handling of foods.

The medical officer must see that all fresh provisions that come aboard are inspected. This includes investigating both sources of supply and quality of fresh vegetables, milk, water, and fruits. The medical officer is a pretty important member of your team.

COACH

The SUPPLY OFFICER, or a line officer appointed to perform the supply officer's duties, is head of your department. This officer is responsible, among other things, for obtaining, storing, and preparing the food for the general mess. He must also see that the galley, bakery, issuing room, and other places that come under his charge are kept clean and in good condition. At shore stations the S.O. is also in charge of the service of the food, thus relieving the first lieutenant of this responsibility.

On some of the larger ships, a COMMISSARY OFFICER is appointed to work under the supply officer. He relieves the S.O. of the details of running the general mess.

On some smaller ships, the C.O. may appoint a line officer to take over the operation of the general mess.

FIELD COACH

The CHIEF COMMISSARY STEWARD is in direct charge of the galley, the bakery, the butcher shop, and the commissary storerooms. If there is no regular supply or commissary officer present, the C.O. must depend on the chief more than ever.

The chief regulates the watches and musters the enlisted men working under him each morning. He often takes personal charge of the galley when the food is being prepared. And he pays particular attention to the issuing of the food.

A couple of desk jobs keep the chief busy much of the time. He sees that the weekly bill-of-fare is prepared about a week in advance. The bill-of-fare is sent to the S.O. who in turn sends it on to the C.O. for final approval. Once the bill-of-fare has been approved by the C.O. it cannot be changed without his approval. The chief is also responsible for making out the STATEMENT OF ISSUES TO THE GENERAL MESS AND COST OF RATIONS. You may be asked to help with these tasks.

GROUND S KEEPER

You'll see the FIRST LIEUTENANT around the general mess once in a while. He is responsible first of all for getting all the mess gear. Then he must see that all this gear is kept in good shape. This calls for frequent inspections.

Aboard ship, the first lieutenant is usually placed in charge of the mess deck and of the service of the food to the men. The supply officer's responsibility for preparing the food stops at the galley door—the first lieutenant takes over from there.

After a meal is over, the problems of cleaning up the mess deck and disposing of the garbage come up. These are other responsibilities for the first lieutenant.

Aboard ship, the master at arms does the on-the-job supervising for the first lieutenant. The mess cooks do most of the actual work under the supervision of the master at arms. These mess cooks are non-rated men who have regular duties in other departments of the ship. The mess duty is in addition to these regular duties.

MEN IN WHITE

Under the field coach, the team lines up as shown in figure 2.

Notice that there are 5 men responsible directly

to the chief. They are—the jack of the dust, the spud coxswain, the senior baker, the senior butcher, and the senior cook. On some ships there is no senior cook position. In such cases, the captains of the galley watches are responsible directly to the chief.

The cooks and bakers are divided into port and starboard watches with the senior cook or baker of each watch acting as captain. On some large ships the

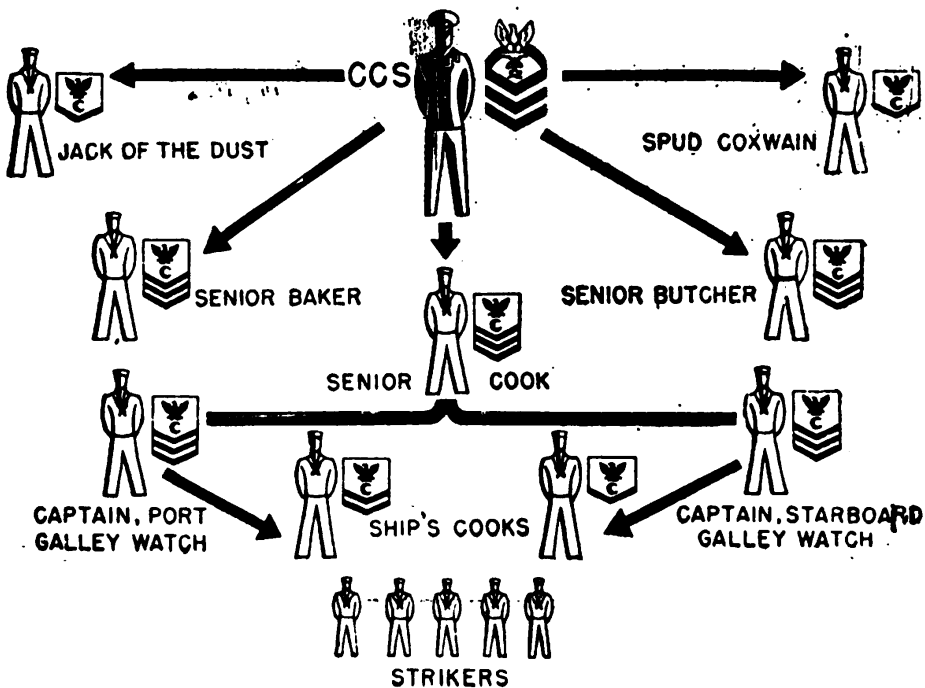


Figure 2.—Galley lineup.

butchers are also divided into watches. The food is prepared under the direction of the watch captains.

The strikers are non-rated men who are being trained as cooks.

SENIOR GALLEY COOK

Where there is a senior cook, he is in direct charge of the galley, and is responsible for carrying out all orders relating to the galley. He sees to it that everything is clean and in good order at all times.

When the watch is relieved, the senior cook should personally see that the watch standers going off

duty have completed their work properly. The men coming on watch should be clean and fit for duty. Their uniforms **MUST BE CLEAN AND WHITE** and they should be wearing aprons and hats.

The senior cook gets the blame if chow isn't ready **ON TIME**. That means on time—not too early so that hot foods cool or iced foods get warm. It is his duty to inspect each type of food served to be sure that it has been prepared in the best possible way.

In the absence of the chief commissary steward, the senior cook must be able to step in and take his place.

CAPTAIN OF THE WATCH

Working directly under the senior cook (or the chief commissary steward), it falls to the lot of the watch captain to see that the daily routine is properly carried out.

He has direct charge of the cooks and strikers detailed to his galley. He musters his watch each morning early enough to get breakfast ready **ON TIME**. The names of men absent at this muster are sent to the chief commissary steward.

The watch captain carefully supervises the preparation, cooking, and issuing of the food to the mess cooks. The bill-of-fare is followed carefully. The watch captain also guards against the unlawful removal or issue of food from the galley.

SENIOR BUTCHER

A ship's cook detailed for duty in the butcher shop cuts and issues all meat for the galley and special messes as needed. As senior butcher, he is under the direct supervision of the chief commissary steward.

The butcher is responsible for the cleanliness of the butcher shop. He must also see that all meats are properly kept in cold storage.

No one except the butcher or his assistants should be allowed in the cold storage room except when stowing, breaking out, or cleaning.

SPUD COXSWAIN

A ship's cook, called the spud coxswain, is detailed for duty in the fruit and vegetable preparation room. He is directly responsible to the chief commissary steward. He sees that the necessary fruits and vegetables are prepared for the daily menu.

JACK OF THE DUST

A ship's cook, storekeeper, or non-rated man is detailed to the issue room as jack of the dust. He must make sure that there are always enough supplies on hand to meet the needs of the mess. Moreover, it's his duty to see that nothing is given out without proper authority—and sometimes that isn't easy. Some friends expect too much.

Frequently, the jack of the dust is also placed in charge of the cold storage compartments. He must see that these compartments are kept clean and that the meats and other provisions are stowed properly in these rooms. Thermometer readings must be taken at least once a day and recorded on the *Statement of Issues to General Mess and Cost of Rations Daily*. The S.O. wants these readings so he can be sure correct temperatures are being maintained.

Stock tally card records are kept in the bulk storeroom to show the amounts of each type of provisions received and issued. Sometimes these cards are also kept in the issue room.

After the bill-of-fare has been received, breakouts are made from the bulk storeroom with the help of a detail of mess cooks. Ordinarily only one, two, or three breakouts are made each week. So the jack

of the dust must be on his toes to get what he needs for several days at a time.

Night rations may be issued only under authority of the skipper. The jack of the dust will receive the word from the chief commissary steward.

GALLEY AND BAKESHOP WATCHES

Cooks and bakers work long hours. They must be up early enough in the morning to prepare breakfast and they remain on the job at night until everything is secured after supper. The work is INTERESTING but HARD. For these reasons, a watch system that gives them more time off at one stretch is set up. Usually, yours is the only outfit aboard ship using this system of watches.

The men are divided into two watches—starboard and port. Watches are relieved at 1300 when everything has been secured after dinner. Ordinarily, the watches run for 24 hours at a stretch. For example, the starboard watch may go on duty at 1300 Monday. This watch prepares supper on Monday and breakfast and dinner on Tuesday. Then it is relieved by the port watch. The port watch prepares supper on Tuesday and breakfast and dinner on Wednesday before it is relieved by the starboard watch. Twenty-four hours off and then 24 hours on.

Some ships use a system of watches which gives the men even more time off at a stretch.

Cooks and bakers are excused from all except general drills and exercise. Even then—except in cases of actual emergency—the number of cooks and bakers left on regular duty is sufficient to prepare the required food.

KEEP IT CLEAN

Have you noticed how often the words “clean”, “cleaning” and “cleanliness” have been mentioned?

There is a reason for this. Disease germs grow best in filth. Good health goes with cleanliness.

One of the main duties of each person connected with the general mess is to do everything possible to keep things clean.

Make it a practice to wash your hands frequently. Keep your finger nails clean, your hair trimmed, and your face shaved. See that your uniform is clean and white. Always wear a clean apron and a hat. But remember—UNDER NO CIRCUMSTANCES SHOULD CLOTHES BE EITHER WASHED OR DRIED IN THE GALLEY WHEN FOOD IS BEING PREPARED.

The galley deck, bulkheads, overhead, equipment, and all utensils must be kept clean. You can expect a clean galley when you go on watch ONLY if you leave a clean galley when you are relieved.

Use enough hot water to get things clean but don't be wasteful. You can rinse out a 60 gallon kettle with 10 gallons of hot water more easily than you can with 30 gallons of water. When water boils, that's as hot as it will get in an open container. Adjust the heat so that the water will just keep boiling until you are ready to use it. And don't heat water until you are nearly ready to use it. Any extra heat is wasted and may cause damage to the range.

Do your smoking OUTSIDE the galley. Cigarette ashes in the soup don't improve its quality, taste, or appearance. And get rid of the garbage in the proper way before it accumulates.

GALLEY REGULATIONS

Rules and regulations are set up in every galley. You'll find them posted. Find out what these regulations are. Then follow them faithfully.

Many of the usual regulations have to do with keeping things CLEAN. You've already read about that. Here are some of the other things usually covered.

When off duty, get your recreation and rest somewhere else. Don't hang around the galley. Only authorized people are allowed in the galley. Others should be asked to leave.

Do everything you can to see that good, wholesome food is used. Be on the lookout for "blown" cans or cans that have holes in them. Put these cans aside so they can be surveyed. Foods with sour and unpleasant smells or off colors are doubtful. DOUBTFUL FOOD IS BAD FOOD, until proved otherwise.

Navy regulations indicate that all fires used for cooking shall be extinguished at tattoo unless the C.O. gives orders to keep them burning for some special purpose.

If you're given a ship's key for any reason, never take it from the ship. Keys to the storerooms are to be turned into the supply office every night. The galley and bakeshop keys may be kept by the captain of the watch until he is relieved. Another thing—pass on to your relief any special orders or duties that he should know about.



CHAPTER 3

INSPECTING PROVISIONS

WHERE FROM

Ever help with the family shopping? It's a big job. Yet, think how much bigger is the shopping job of your Navy. And the Navy is just as anxious as any member of your family to get the best provisions possible.

The ships of the Navy get most of their foodstuffs from a supply depot, a contractor, or a supply ship. Before leaving port, a ship is usually loaded to capacity with canned goods, flour, breakfast cereals, coffee, tea, sugar, frozen meats and other provisions in accordance with the standard loading lists given in Chapter 13 of *MuSandA Memo*. As a rule this supply lasts for something less than six months, depending on the size and type of the ship and the mission it has been assigned. Supply ships help replenish the stores whenever necessary.

Perishable provisions—meats, dairy and poultry products and fresh fruits and vegetables—are obtained while in port within the United States either

from a supply depot or from dealers. Purchase contracts are made with dealers by supply officers ashore. Information concerning these contracts is sent to all ships and stations in the area by means of a contract bulletin. Reference to this bulletin gives the names and addresses of dealers from whom various types of provisions can be bought. Prices and descriptions are also indicated.

If an item is not available from the supply depot or from contract dealers, the supply officer or the commanding officer may approve purchases from other dealers. These purchases may be made anywhere in the world.

HOW GOOD ARE THE PROVISIONS

Most provisions are inspected by a representative of the Department of Agriculture, sometime before being delivered to the ship. The medical officer of the ship is responsible for seeing that nothing harmful to the health of the crew comes aboard. This calls for a **QUALITY** inspection. The supply department is responsible only for inspecting provisions as to **QUANTITY** received.

Federal specifications are set up to cover most of the items of provisions which are used by the Navy. These specifications give the sizes, grades, appearances, and types of acceptable products. The Bureau of Supplies and Accounts has a representative on the Board that prepares these specifications. This representative is responsible for the **SPECIAL** Navy requirements included in the specifications. As these foodstuffs are the raw materials with which you work, you'll want to know something about their requirements.

GOOD BREAD—CAN YOU TELL IT?

Examine the outside of the bread first. Good bread is golden brown in color. The color is uniform

throughout WITHOUT light or dark spots. It has a good volume and is symmetrically shaped—not low on one end and high on the other or bulging in the middle. Pierce the crust of a sample loaf with your forefinger to see if the crust is thin and tender.

Now cut the loaf in two. Chew a piece from the center and another one containing crust. The taste must be pleasing. Put one of the cut surfaces near your nose and squeeze the bread so you can more easily smell its odor. The odor should be pleasingly sweet—not sour, musty, or moldy.

The best color of the inside soft portion, or crumb, is a creamy white. Cut a few slices and hold them to the light. You ought to see a healthy looking gloss. Examine the grain of the bread. A close, even, uniform grain is desired. No open or coarse grains or large holes should show.

Page 211 in Chapter 12 of this book gives you a scoring chart which will help you judge bread.

CAN YOU PICK OUT GOOD MEAT?

Can you tell a good steak or roast when you see it—when you SEE it, NOT when you TASTE it? How

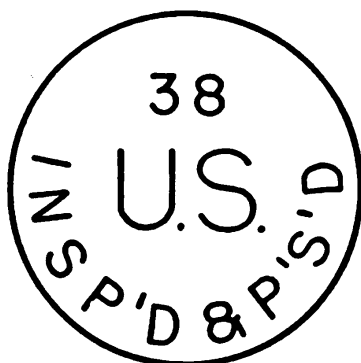


Figure 3.—Inspection stamp—meat (U. S. Dept. of Agriculture).

much fat should be on it? What color should it be? What part of the carcass should it be from? These questions come up when you buy meat for a few

people. Similar questions need to be answered when considering meat for Navy use.

All deliveries of meat and meat food products made to the Navy in the United States must carry the inspection stamp of the United States Department of Agriculture. See figure 3. The number on this stamp indicates the packing plant where the meat was processed. The "U. S. INSP'D & P'S'D" indicates that the meat has met the requirements set up by the Department of Agriculture.

But that isn't enough. One of the stamps shown in figure 4 must also appear on meat acceptable to the Navy. These Army and Navy inspection stamps are placed on the meat at the meat packing plants.

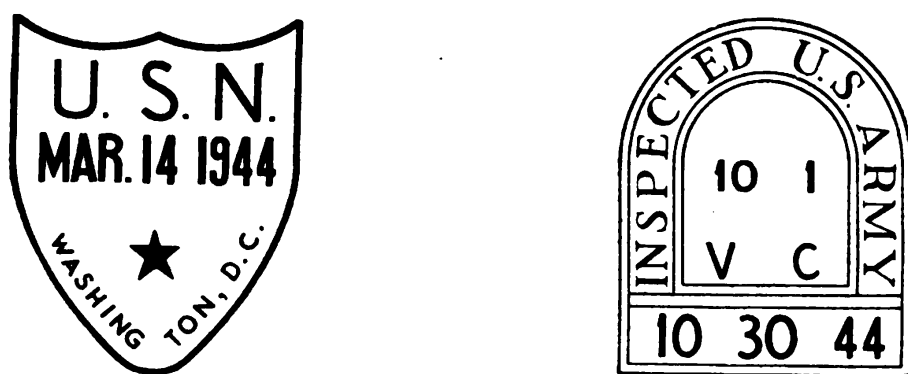


Figure 4.—Inspection stamps (Navy—Army).

The stamps indicate that the meat has met the high requirements set up by the Army and Navy.

Another inspection is usually made by a Department of Agriculture inspector at the time the meat is delivered to the Naval activity. This inspection is made just to be sure the meat is still good.

After all this has been done, an officer or petty officer from the medical department of the ship makes a QUALITY inspection and an officer or petty officer from the supply department checks on the QUANTITY.

BEEF

Beef used by the Navy may be divided into 2 classes—fresh-frozen and fresh-chilled. Fresh-frozen beef is frozen into a solid block. Fresh-chilled beef has been thoroughly cooled to a temperature just above freezing but it has NOT been frozen.

Most of the beef taken aboard is frozen and boneless. The containers are labeled, "BEEF, FRESH-FROZEN, BONELESS." This meat is made up from equal numbers of beef forequarters and hindquarters. The frozen beef is divided into three cooking groups—beef for roasting or frying takes up 40 percent of the meat; 30 percent is good for stewing or boiling; and the remaining 30 percent is suitable for ground beef. The boneless beef, so divided, is packaged in weatherproof fiber boxes. Each box holds from 45 to 55 pounds of meat.

Sometimes fresh-frozen boneless beef is made up from the hindquarters only. It is then labeled—"BEEF, HINDQUARTERS, FROZEN, BONELESS." This type of beef is packaged in the proportion of 50 percent for roasting and frying, 25 percent for stewing and boiling, and 25 percent for ground beef.

Both frozen and chilled beef are generally delivered to shore stations in quarter carcasses.

HOW TO TELL GOOD BEEF

Remember that beef is inspected at the packing plant by a Department of Agriculture inspector. The beef is GRADED at that time.

Meat grading is based on three things—conformation, finish, and quality.

CONFORMATION refers to the shape, thickness, and meatiness of the carcass or cut. The best carcasses or cuts have a high percentage of meat as compared with bone. (Boneless meat is graded before the bones are taken out.)

FINISH refers to the amount, kind, and distribution of the fat. The best meat has a creamy white, hard fat evenly spread over the carcass.

QUALITY is determined by the color and character of the bone, the texture and color of the lean meat, and by the marbling. A piece of meat is well marbled

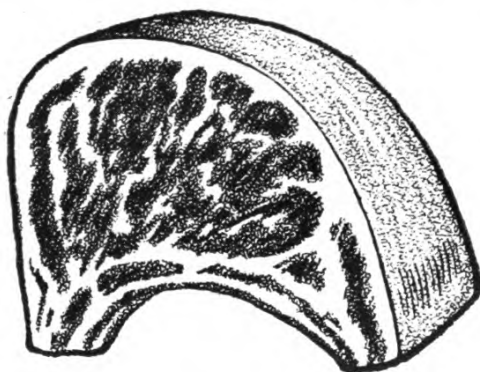


Figure 5.—Marbling in meat.

when there is a good mixture of fat mixed in with the lean meat. Notice how the fat shows up in figure 5 with a desirable lace-like effect.

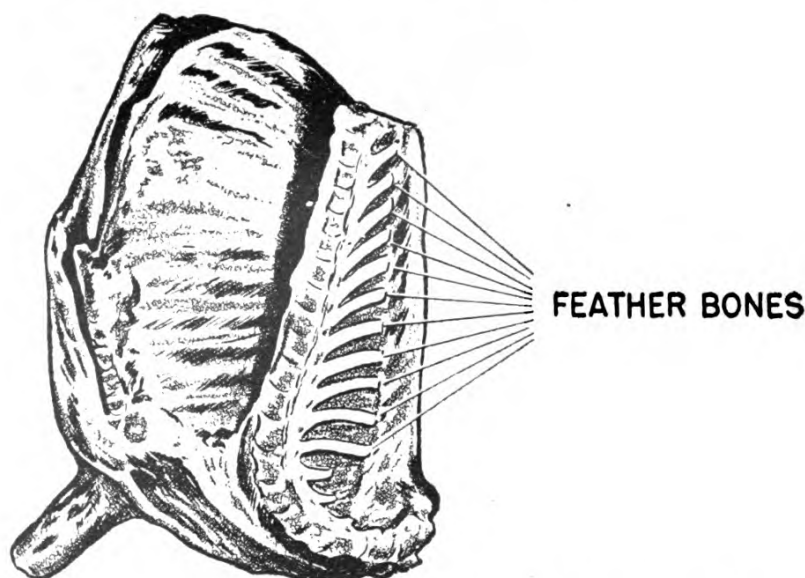


Figure 6.—Quarter of beef showing feather bones.

The carcass of young, tender beef contains soft, red bones with buttons (white cartilage) on the ends

of the feather bones (figure 6). The lean meat is a bright, cherry red and fine in texture (grain). Coarse meat is tough.

Frozen beef is usually darker in color than fresh chilled beef of the same grade. It becomes darker in color as the length of the storage period is increased.

WHAT ABOUT VEAL?

VEAL (flesh of calves) is bought by the Navy in carcasses, in sides (halves), or in cuts. The meat may be fresh-killed or fresh-frozen. Acceptable veal carcasses weigh between 75 and 250 pounds. The best carcasses are blocky and compact. The meat is thinly covered with clear, white, firm fat. The meat itself is firm and light brownish pink in color. The kidneys are covered with hard, white fat.

LAMB

LAMB is delivered either in carcass form or in cuts. Carcasses should weigh between 30 and 60 pounds. Lamb may be fresh-chilled or fresh-frozen.

Good quality lamb has firm flesh of fine texture. The fat is well marbled through the meat. The lean meat is of a light pink color. And the bones are soft.

PORK

Both fresh and cured wholesale cuts of pork are bought for Navy use. The most common FRESH cuts are loins, shoulders, hams, and spareribs. These fresh cuts should be meaty and uniformly covered with a firm white fat. The meat itself should be fine-grained and firm—not watery. Good pork cuts have a light grayish-pink color. Generally they are delivered fresh-frozen.

Properly CURED hams and bacon can be kept much longer without refrigeration than fresh meat. BACON is dry cured or dry salt cured for Navy use. HAMS

are sweet pickle cured. This meat must also have been smoked.

The grade of the finished product depends upon the curing method, quality of the fresh meat, and the way it was trimmed. The best cured bacon and hams—and that's the kind you want—have smooth, thin skins and firm white fat. The meat is fine grained and bright colored.

VEGETABLES

Vegetables are such an important food, some people eat nothing else. And most important among the vegetables is the potato.

POTATOES—More white potatoes are used aboard ship than all the rest of the fresh vegetables put together. So quality is extremely important.

The best potatoes are sound, smooth, shallow-eyed, and reasonably clean. Avoid spuds that are wilted, leathery, or discolored. Watch out for DECAY. This decay appears either as a wet or a dry rot. Wet rot spreads rapidly.

There are two types of white potatoes—ROUND and LONG. These types must not be mixed. No. 1 Grade, Size *A* spuds of either the round or long types are the most suitable for shipboard use. These potatoes are at least $1\frac{7}{8}$ inches thick.

SWEET POTATOES—Good sweet potatoes are smooth, well-shaped, firm, and of bright appearance. Check them for decay. This decay shows up as a soft wet rot or as a dry, shriveled, sunken area—usually at the end of the sweet potato. Sweet potatoes that appear to be damp should be examined carefully as they may not be the kind you want. The dampness may be due to bad handling, freezing, or decay.

Extra #1 is a desirable grade of sweet potato for Navy use. This grade calls for sweet potatoes at least $1\frac{3}{4}$ inches thick and 8 inches long. They must weigh no more than 16 ounces each.

ASPARAGUS—Acceptable asparagus is fresh, ten-

der, and firm. The tips are compact. Asparagus ages rapidly after it has been cut; the tips spread out and become woody. Green asparagus is preferred to the blanched kind. The stalks should measure at least $\frac{1}{2}$ inch in thickness.

BEANS—There are many varieties of green and wax or yellow pod SNAP BEANS. Some are flat—some are round. The best snap beans are clean, fresh, firm, crisp, tender, and free from spots. Break several pods in two. They should snap when they break.

Avoid beans that are stringy or decayed. Decay shows up as a mold or as soft watery places on the beans.

Good LIMA BEAN pods are well filled, clean, bright, fresh, and of a dark green color. Dried, shriveled, spotted, yellowed, or flabby pods may be old or affected by disease.

Shelled lima beans ought to be plump and tender. Shelled beans spoil easily. Inspect them with extra care.

BEETS—The best beets are smooth, free from blemish, and reasonably clean. They are at least $1\frac{1}{2}$ inches thick.

CABBAGE—Some of the most common types of cabbage are the pointed, Danish, domestic, savoy, and red. Prime heads of cabbage are reasonably solid and heavy. All but three or four of the outside leaves should have been removed. Cabbage heads that show worm injuries, decay, yellowing of leaves, or signs of bursting are not acceptable.

CARROTS—Good quality carrots are firm, clean, fresh in appearance, smooth, well-shaped, and of good color. The diameters are between $1\frac{1}{2}$ and 3 inches and the lengths are at least 3 inches.

Wilted, flabby, soft, or shriveled carrots are undesirable. So are decayed carrots. This decay shows up as a soft or water-soaked area which may be partially covered with mold.

CAULIFLOWER—Good cauliflower heads are white or creamy-white, clean, heavy, firm, and compact. The outer leaves are fresh and green. The best cauliflower heads are at least 4 inches thick. Avoid spotted, speckled, or bruised heads.

CELERY—The most desirable celery is of medium length and thickness. The stalks are brittle enough to snap easily. Pithy or stringy celery is not very good. **TRIMMED** celery is delivered washed; **UNTRIMMED** celery may have to be washed.

CORN—Green corn is of two classes—**SWEET** and **FIELD**. Field corn never has a very sweet taste. The kernels of field corn are usually white. Sweet corn kernels may be either white or yellow.

The husks of good corn are fresh and green. The cobs are filled with bright, plump, milky kernels that are just firm enough to offer slight resistance to pressure.

CUCUMBERS—Cucumbers should be firm, fresh, bright, well-shaped, and of a good green color. The No. 1 grade is best. Cucumbers in this grade are at least $1\frac{7}{8}$ inches thick and 6 inches long.

EGGPLANTS—Heavy, firm eggplants free from blemish and of a uniform dark color are the most desirable. Decay on eggplant appears as dark brown spots. Watch out for it. It spreads very fast.

GREENS—Broccoli, collards, endive, escarole, kale, and spinach are the most common leafy green vegetables. These greens must be fresh, young, green, tender, and reasonably free from dirt. Flabby or wilted plants or leaves indicate age or some form of damage.

LETTUCE—Iceberg head lettuce is the type most commonly used in the Navy. Lettuce should be fresh, crisp, tender, and firm. No decay should be present. Only a few of the outer leaves should be left on—they serve as protection.

ONIONS—Bright, clean, hard, well-shaped, mature

onions are the ones you want. Onions with seed stems are undesirable. A thick, tough, woody condition of the stem or neck tells you that these seed stems are present. Sometimes onions decay—the decay attacks either the outer or inner scales of the onion bulb.

Whenever possible, get No. 1 grade Northern onions for shipboard use. These onions must be at least 1½ inches thick.

Good quality in GREEN ONIONS is indicated by fresh green tops and by medium size necks. These necks should be white in color for at least 2 to 3 inches from the root. The part of the green onion that is eaten ought to be crisp and tender.

PARSLEY—Acceptable parsley is bright green, fresh, and free from dirt and yellowed leaves.

PARSNIPS—Smooth, firm, well-shaped parsnips are best. They should be between 1½ and 3 inches thick.

PEAS—The pods of good peas are bright green in color. They look fresh and are velvety to the touch. The pods must be well filled. A yellowish appearance indicates age or damage.

PEPPERS—Sweet peppers should be mature (ripe), firm, and well shaped. Bleached, discolored areas on the peppers are danger signs—such peppers won't last long.

RADISHES — Good radishes are well-formed smooth, and firm. They are tender, crisp, and mild in flavor.

SQUASH—Summer squash should be fresh, fairly heavy for its size, and free from blemish. The rind (outer skin) should be so tender it can be punctured easily. The rind on winter squash should be much harder.

TOMATOES—Good quality tomatoes are ripe but not overripe, fairly well formed, plump, smooth, of good color, free from blemish and worm injuries. Puffy or watery tomatoes have a poor flavor. Acceptable tomatoes must be at least 2¼ inches in diameter.

TURNIPS—The best turnips are smooth and firm. There are few leaf scars around the turnip tops and few fibrous roots are present on the bottom part of the turnips.

Good **WHITE** turnips should be between 2 and 3½ inches thick—**YELLOW** turnips between 3½ and 7 inches thick.

FRESH FRUITS

Fresh fruits are enjoyed and appreciated by almost everybody. But they must be fresh and of good quality. Only good, sound fruit, free from decay or mold should ever be used.

APPLES—The best apples are firm and of good color and flavor. Overripe apples are soft—they sink in when you press on them just a little. The larger apples are more likely to be overripe than the small or medium-sized ones, particularly toward the end of the late apple season. Unripe apples usually lack color and flavor. Watch out for decay.



Figure 7.—Hand of bananas.

BANANAS—Bananas are bought in bunches or in cut **HANDS** (figure 7) of not less than 10 fully developed fingers packed in boxes. The hands must be well filled, clean, bright, firm, and plump. The bunches

must weigh at least 55 pounds, and the bananas must be at least 5½ inches long. Hawaiian bananas are an exception. A bunch of Hawaiian bananas must weigh at least 35 pounds and the bananas must be at least 5 inches long.

Watch out for bruises and decay. The bruises show up as dark or blackened areas of the skin. Mold or darkened banana skins may indicate decay.

BERRIES — Good BLACKBERRIES, DEWBERRIES, LOGANBERRIES, or RASPBERRIES are bright and clean. Each berry is plump, fresh, and of good color.

Good STRAWBERRIES have a solid red color. They are at least ¾ inches in thickness and the green cap is still attached.

All berries should be free from dirt, trash, and moisture.

CHERRIES—The best cherries are bright, fresh, plump, and of good color. Decayed cherries are not acceptable. Damp, stained, or leaky boxes indicate that decay may be present.

CRANBERRIES—A fresh plump appearance, combined with high luster and firmness, indicates good quality.

GRAPEFRUIT—Good grapefruit is firm and springy to the touch—not soft, wilted, or flabby. The fruit should be well-shaped and heavy for its size. This heaviness indicates a thin skin and high juice content.

Grapefruit usually comes packed 70 and 80 to the box. Decayed fruits are not acceptable.

GRAPES—Grapes must be ripe and fresh. The individual berries should be attached firmly to the stems.

There are two principal types of grapes—American and European. The American type is generally preferred for use aboard ship.

LEMONS—California produces almost all the lemons grown in this country. The skin of good lemons has a fine texture. The good lemon is heavy for its size.

Decay appears as a mold or as a soft discolored area at the stem end. In an acceptable box of 360 lemons, only 2 lemons may be decayed.

MELONS—Quality in CANTALOUPEs is determined by sweetness, fine texture, flavor, and ripeness. Ripeness is indicated by netting on the skin and by the condition of the scar at the stem end. The netting should be coarse, corky, well-developed, and of a grayish color. The scar at the stem end should be slightly sunken and calloused. This indicates that the melon separated easily from the vine. It didn't have to be cut away. Overripe cantaloupes are soft, watery, and insipid. Decay is indicated by soft sunken spots on the surface or by mold and moisture on the stem end.

HONEYDEW melons keep a long time. They may be taken aboard before they are ripe but must be allowed to ripen before they are used.

Ripeness is the most important thing to check when inspecting WATERMELON. Thump the melons with your knuckles. If they make a dull hollow sound they are ripe. If they make a ringing sound they are not yet ready for eating.

ORANGES—Oranges of the best quality are firm and heavy. The skins are finely textured and well colored. Decay shows up as a soft area that seems to be water soaked. Acceptable deliveries of oranges may have no more than three oranges out of every 100 decayed.

PEACHES—As peaches are extremely perishable, use them aboard ship only while the ship is in port and for a few days after leaving port. Taste a sample of the peaches to see if they are ripe. The color alone won't tell you. The No. 1 grade of peaches is the most desirable for use aboard ship. These peaches must be at least 2 inches thick.

Watch out for decay. Decay in peaches appears in the form of brown circular spots which spread rapidly.

PEARS—Pears should be firm—but not hard, clean and well formed—not wilted or shriveled. It is all right to accept soft pears if they are not overripe and if you can use them right away. Good sizes for use aboard ship are those that are packed 135 or 150 to the box. Acceptable pears may have only two out of every 100 showing signs of decay.

PLUMS and PRUNES—There are many varieties of plums. Good plums and prunes are plump, clean, of fresh appearance, and soft enough to yield to slight pressure. Shriveled fruit is usually leathery and poor in flavor.

SEA FOODS

FISH—Fish are delivered fresh—chilled, or fresh-frozen. Make sure the fish are FRESH in either case. Fresh fish have a fresh smell—as tangy as an ocean breeze. Their eyes are bright, their flesh firm, moist and elastic. Fresh-frozen fish are to be frozen solid when delivered. Refrozen fish are not acceptable.

SHELLFISH—The shells of fresh OYSTERS and CLAMS should be tightly clamped together. Do not accept them if the shells are gaping, because this means the shellfish are dead and, therefore, no longer good.

CRABS and LOBSTERS should be alive—very much alive—when you get them.

CANNED GOODS

Canned goods are ordinarily satisfactory if the cans are airtight. Look for evidences which might indicate that the airtight seal has been broken. Dents, rust spots, and evidence of leaking are danger signs.

The spoiling of the food inside the can usually causes the can to swell and bulge. The only time that the food in a swollen can may be used is when the swelling has been caused by freezing. Check section 1305 of the *BuSandA Memo* for the details.

Occasionally, canned goods may spoil without swelling. This type of spoiling is known as **FLAT SOURING**. When the can is opened, flat souring can usually be detected by the unusual color, texture, or odor of the food. Remember, **DOUBTFUL FOOD IS BAD FOOD**. Don't accept or use anything about which you have the slightest doubt.

POULTRY

DRESSED POULTRY—the kind usually delivered—has been killed and bled. Only the feathers have been removed. Dressed poultry bought by the Navy includes chicken, duck, fowl, and turkey depending upon the location and season of the year. Poultry may be delivered as fresh-killed, fresh-chilled, fresh-hard chilled, or as storage poultry.

Acceptable birds are full fleshed, well bled, free from deformities, abrasions, bruises, or other dressing defects. The head, feet, and vent are clean. And the pack is uniform and attractive.

Chickens are classified as broilers, fryers, roasters, stags, capons, and fowl. The acceptable weights are variable—you'll have to check the contract specifications under which the chickens are ordered in order to tell whether the requirements have been met.

SHELL EGGS

Eggs for use ashore may be delivered as fresh or as storage eggs. Storage eggs have ordinarily been processed (treated with oil) sometime during the spring of the year, before being put into storage. Insofar as possible, only fresh eggs are procured by the Navy for use afloat and overseas.

Federal specifications for eggs provide for six different grades, four different classes, and five different weight ranges. Check the specifications to see what kind you're supposed to get.

When inspecting eggs, open up and examine a number of the cases. The eggs should be clean, uniform in size, sound shelled, and free from mold and foreign odors. Break open several of the eggs from different cases. The size of the air-cell underneath the shell, the appearance of the yoke, and the firmness of the white part should meet the requirements of the grades being delivered. Check your specifications again.

Also—the eggs must be packed properly in containers which meet the requirements of the specifications as to kind of wood, construction and number and type of fillers and flats. Cases of eggs that are exported must be strapped.

DAIRY PRODUCTS

MILK AND CREAM—The containers in which fluid milk and cream are delivered should be inspected carefully. Be sure these containers are the types called for in the specifications of the contract. And—see that the containers are clean and in good shape. During hot weather, check and record the temperature of the milk and cream at time of delivery. Throughout the year regular tests of selected samples of the milk must be carried out by the medical department.

BUTTER—Be sure the containers in which butter is delivered carry the proper inspection stamp showing the grade and weight of the butter. Sample the butter for taste. It should be fresh, sweet, and clean tasting. The texture should be firm and uniform. The color of good butter is even and free from specks, streaks, and mottles. Break apart a piece of the butter. If the butter has a good, desirable grain, the break will show a jagged edge.

CHEESE—Cheddar cheese may be delivered either in natural or in processed form. **NATURAL** cheese may be delivered as cheddar (70 pounds), flats (35

pounds), single daisies (22 pounds), or as double or triple daisies. It may also be delivered in a number of smaller types and sizes.

All types of natural cheese should show a smooth, hard rind. This rind must be free from mold, wrinkles, cracks, and roughness. The flavor of good cheese is clean and "nutty." The texture is solid, compact, and free from breaks, holes, and chunks.

The color of good cheddar cheese is even throughout. Hold a small piece of this cheese up to the light. The light should come through in somewhat the same way that light comes through a frosted glass.

ICE CREAM—Acceptable ice cream is frozen solidly. It must be packed in accordance with specifications. Good ice cream is smooth bodied and close textured. It has an even, natural color. The taste is rich and creamy and the flavor must equal that specified in the contract specifications.



CHAPTER 4

STORING PROVISIONS

YOU'LL NEED TO GET AT 'EM

Aboard ship you don't have a 10-acre lot for storing your provisions. Your space is strictly limited. And yet you must store enough provisions to last for months at a time. There is no running around to the corner grocery every day or so.

Sure, you can pile the stuff in—but how about getting it out again. If you're not careful, the items you want may be on the bottom of a huge pile of other things. You'll have to empty the storeroom in order to get what you want. Stumbling over boxes put in awkward places or throwing your arm out of joint reaching for something stowed just out of reach isn't exactly fun, either.

You're going to have to use your head. Stow the provisions you are going to need most frequently where you can get at them easily. Put everything away in an orderly manner. Orderly stowage will help you keep things clean as well as make a good impression on any inspecting officer. Best of all, you

will be able to find what you want when you want it. But, that isn't all—

A PROPER ENVIRONMENT

Do you know what effect HEAT, COLD, LIGHT, WATER, TIME, and AIR have on different provisions? You will need such knowledge to help you decide where and how to store food stuffs so they will be fit to use when needed.

HEAT used in the right way gets rid of harmful germs—but used in the wrong way, it speeds up their growth. COLD is excellent for keeping frozen beef, but it wrecks potatoes. LIGHT keeps some insects under control, but it destroys the coloring of pickles in glass jars. WATER in the air keeps lettuce fresh and crisp, but water is bad for flour. Fresh, unfrozen milk spoils in a few days' TIME. Green coffee beans, except Brazilian Santos, improve with age. Dried fruits get along best where fresh AIR moves around a good deal. Canned goods spoil quickly when exposed to air. And you MAY have some UNWELCOME guests to deal with.

UNWELCOME GUESTS

Insects are unclean, unwanted, and unwelcome. They try to spend part of their time in filthy places and the rest of their time in the provisions you wish to use for food. Do everything possible to keep them out of the storeroom. If they do get in, make it so unpleasant for them they will either leave or die.

Make a careful inspection of all provisions JUST BEFORE they are stored. The insects themselves may not be in sight but evidences of their presence may be observed. Webs or silky tubes on sacks or boxes, holes in the containers, and brownish specks in the flour or sugar tell you insects are around.

If some do get in, what are YOU going to do about

it? Most insects hate a thoroughly clean place. Keep the storeroom absolutely clean and some of them may starve to death. The rest will be easier to control. It is easier to keep the place clean if you store all provisions on supports high enough to allow the deck to be well swept. Sweep up the flour and dust that falls between the sacks and packages—and do it FREQUENTLY. Clean the corners, cracks, and tops of the beams—but OFTEN.

Insects grow best at temperatures between 50° F. and 110° F. As you can't generally keep the storeroom above 110° F., keep it below 50° if possible. Insects don't like the cold treatment.

In spite of all you do, some insects or their eggs may get aboard ship. Even under the POOR housing conditions you have provided for them, they may develop and grow. Better not keep stock on hand any longer than necessary. Always use the oldest stock first. This means you will have to stow supplies so you can get at the oldest items without too much trouble.

Cockroaches and water bugs can be eliminated by using commercial sodium fluoride. Dust this poison into all cracks and corners where cockroaches have been seen. Do it everywhere at one time or they will move to places that you missed. Do this every day until you see no more evidence of the pests. Arsenic mixed with paste and daubed on pieces of cardboard will help you get rid of some insects—but BE CAREFUL. Never forget you are dealing with deadly poisons.

The DDT spray is very effective in eliminating most insects.

You may be able to get rid of insects in flour, breakfast foods, and rice by giving them the heat treatment. Place the flour or other material in pans not more than 1½ to 2 inches deep. Put the pans in the oven and heat to about 180° F. Fifteen minutes

at this heat is enough. Be careful you don't scorch anything. Then sift these provisions through a fine mesh sieve so the dead insects will be caught on the sieve and can be eliminated.

COLD STORAGE

Cold storage places aboard ship are usually divided into three spaces or sections so that a different temperature can be maintained in each section. The cold storage or freezer section is kept at from 0° to 15° F., the butter and egg section is kept right around freezing (30° to 32° F.); and the vegetable or chill section is kept at about 45° F. Someone—usually a ship's cook or a storekeeper—checks the thermometer readings frequently. The refrigerator pipes must be **SCALED DOWN** at least once every two months. If you find leaks in the sheathings or doors to the refrigerator, report your findings to the supply officer immediately.

STORING DRY PROVISIONS

Keep **BAKING POWDER**, **CORNSTARCH**, **CRACKERS**, **MACARONI**, **SPAGHETTI**, and **SODA** in a dry place having

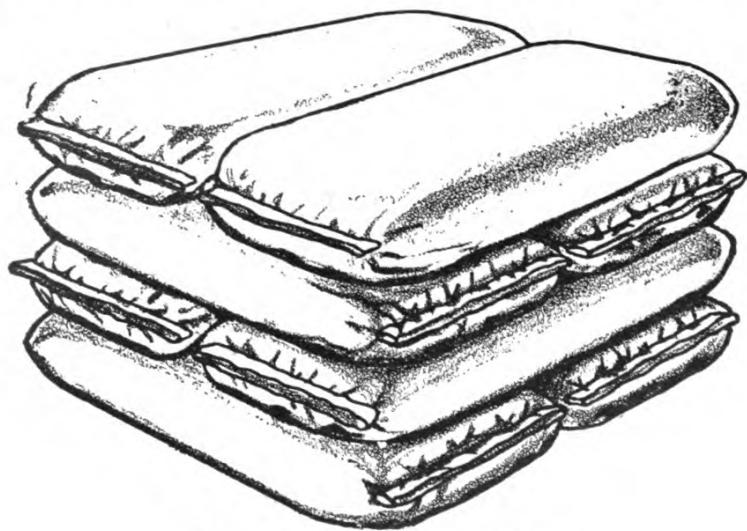


Figure 8.—Bags crosspiled.

a **MODERATE** temperature. Under good conditions they will last at least five months. Be careful not to

damage the containers. A damaged container is an open door to insects, rats, and mice. If any of the containers do become damaged, the contents must be used right away.

Be sure the storage place for DRIED BEANS and BARLEY is dry and cool (below 44° F. if possible). Good ventilation keeps the beans from sweating—use fans if necessary. Cross-pile the bags on dunnage in rows two bags wide. Look at figure 8. Leave aisles between the rows for ventilation. Inspect and turn the bags frequently. Look for signs of mold on the

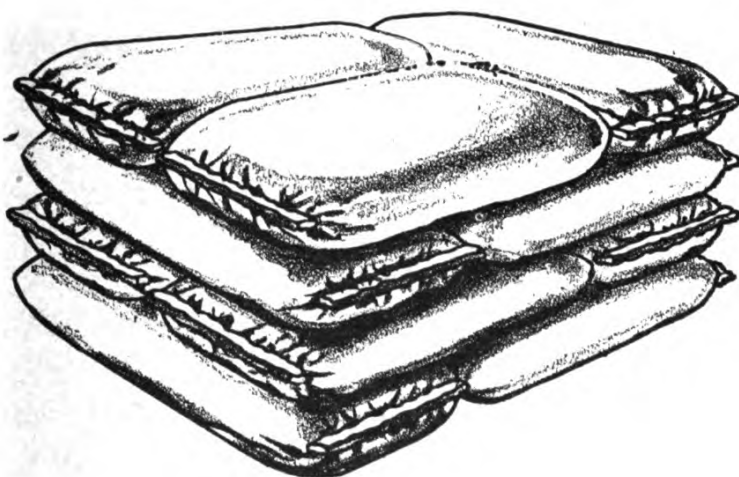


Figure 9.—Flour pile.

seed scar of the beans—it generally appears there first. Check for signs of insects. Under good conditions dried beans and barley can be safely kept for one year.

The storage place for BREAKFAST FOODS must be particularly dry. If necessary, lime can be spread around on the deck to absorb the moisture. In a dry place these breakfast foods last six months.

Stow CORN MEAL and HOMINY GRITS on dunnage in a cool, dry place. Provide plenty of ventilation and they'll last from 6 to 18 months. The type of corn meal known as "water ground" gets rancid after about three months. Use it up fast.

EGG NOODLES keep for a period of one to two years under dry, cool storage conditions.

Stow sacks of FLOUR on dunnage in cool, dry storerooms or compartments built so as to keep out rats and mice. Pile sacks no more than six high, as shown in figure 9. The extra weight of a higher stack harms the flour in the lower sacks. Keep flour away from strong odors. Inspect flour sacks often to see if any insects are in them. Wheat flour keeps well for more than a year. Buckwheat and graham flour last for only five months.

Stow PRUNES, RAISINS, and other DRIED FRUITS in a dry place. Dried fruits keep in good condition in a warm place for only about a month. At 70° F. they'll last about a year, but at 35° F. they'll keep for two years. The relative humidity should be kept at 75 percent.

Pile sacks of RICE on dunnage in a cool dry place. Rice dries out in storage and loses some weight but remains just as good to eat. Keep the rice from becoming musty by providing good ventilation. In hot climates, highly milled rice may become musty and infested with insects after six months, but brown or unmilled rice is good for only three months.

CANNED GOODS AND DRINKS

A can opener is a mighty handy tool to have aboard ship. Most of the CANNED PROVISIONS will last at least a year and are easy to prepare. About the only exception is canned sea biscuits. These can be kept for eight months only. Your main job is to keep air from getting into the cans and spoiling the contents.

Store the cans carefully in a dry place where the temperature is around 50° F. Wet or damp cans may rust out, thus letting the air in. Heat may cause the acids in rhubarb and strawberries to eat their way through the cans. Careless handling may cause dents that will develop pinholes.

EVAPORATED MILK spoils if it is kept long at a temperature of 90° F. or above, but keeps well at between 33° and 60° F. Turn the cases over at least once every three months—once a month if practicable—to prevent the separation of butter fats. CONDENSED, SWEETENED MILK acts pretty much the same except that its color and thickness change at temperatures above 70° F. Both SKIM and WHOLE MILK POWDER absorb smells easily, so it's wise to use them soon after you have opened the cans.

If glass containers are sealed with metal tops or corks, lay the bottles on their sides to prevent the stoppers from drying out and letting air in.

Light is sometimes harmful to the color of goods in glass, so leave the bottles in the carton and lay the carton on its side in a cool place.

Keep airtight containers of COFFEE and COCOA in a dry, cool place. Cocoa becomes rancid at temperatures over 70° F. Pile the sacks up on dunnage in such a way that there will be plenty of ventilation between the sacks. Under proper storage conditions, all green coffee except Brazilian Santos improves with age up to five years. Keep dampness out. Damp coffee beans become soft and pithy and lose their flavor and aroma.

Coffee absorbs other smells easily. Keep it away from freshly painted places, kerosene, and onions. Roasted and ground coffee in sacks loses its flavor fast. Use it up as quickly as possible.

Put TEA in a dry place where it won't pick up strong smells. Dampness makes tea musty and sour. High temperatures destroy its flavor. Rough handling breaks up the leaves. You can keep black and Oolong teas for two years—green teas for one.

SWEETS

Store SUGAR in a clean, dry place—away from flies, ants, and roaches. Granulated sugar sweats and becomes hard at temperatures over 80° F.; also becomes

hard if the air is damp. The flavor will be affected if you allow either mold to grow or dust to settle on the sacks. Use POWDERED SUGAR within three months as it may cake up badly after that time.

Pure SUGAR CANDY and pure CHOCOLATE CANDY should be stored under the same conditions as sugar. Milk mixed with the chocolate, or nuts and fruits added to it, make the candy harder to preserve. Soft candies must be stored at a temperature of less than 60° F. Chocolates stored in temperatures over 70° F. develop a white "bloom", but they can still be eaten.

SIRUPS last for a long time if they are in air-tight containers. Handle the cases carefully to prevent leakage. Keep in a place where the temperature is moderate.

JAMS and JELLIES will remain usable for over two years if air doesn't get into the containers. Take care of these as you do other canned things. WATCH OUT FOR INSECTS. THEY LIKE SWEETS.

DAIRY PRODUCTS AND EGGS

Store MILK in absolutely clean, covered containers. Before using the milk, stir it with a clean paddle to mix the milk and cream evenly. Milk kept just above freezing stays good for at least a week. The higher the temperature goes above freezing, the quicker the milk spoils. Fresh, pasteurized milk can be kept for months if solidly frozen. Thawed milk is beneficial although it doesn't look as attractive as fresh milk.

BUTTER, frozen solid and kept at 0° F. or below, remains good for eight months or more. Butter that is kept at a temperature above freezing must be used within a month. Thawing butter at a fast rate is bad. The best plan is to remove a day's supply from the freezer each day and set it in the chill room where it can thaw out slowly. When you use only part of a carton, put what's left back in the carton and close it as tightly as possible. Continued contact with air makes butter rancid. As butter picks up odors quickly,

keep it where it cannot pick up the odor of onions or fresh paint.

CREAM CHEESE left wrapped and in the box in which it was delivered stays good for several months at a temperature around freezing. AMERICAN and BRICK CHEESE crumble if the temperature gets much below freezing BUT the flavor sours if the temperature rises very far above freezing. Put these cheeses in the butter and egg box but be sure they are tightly wrapped and boxed. Most cheeses have a layer of paraffin on the outside to protect them from mold and insects. A mold on the outside of the cheese is not harmful as long as there are no cracks or openings in the paraffin.

Keep ICE CREAM as cold as possible. It will last for several weeks at 0° F. and for six months at —6° F. Chocolate and maple walnut ice creams keep the best. Use strawberry ice cream within a month. Vanilla may develop off (unnatural) flavors in about three months.

Keep EGGS in a dry, well ventilated place free from odors. If necessary, spread calcium chloride around to absorb the moisture from the air. A sprinkling of lime will eliminate bad smells. Stow the cases of eggs on dunnage and put 7/8-inch wood strips between them for ventilation. Leave at least 8 inches between the top of the highest case and the overhead.

If a case of eggs begins to get a moldy smell, remove the eggs from the case and turn an electric fan on them for half an hour. Use these eggs the first chance you get. If eggs get wet, each one should be dried with a clean cloth or with the fan. Repack them in a dry case and use as soon as possible.

Keep the eggs in the butter and egg room, where the temperature is around 32° F. Eggs freeze if the air gets much colder than 32° F. and they spoil if it gets much warmer. Plan to use them within four to six weeks time.

YEAST

COMPRESSED YEAST retains most of its baking strength if kept under 40° F.—around freezing is best. If yeast must be stored longer than two weeks, you should be sure that it is fresh and in excellent condition. Freeze it solidly and leave it that way until you use it. Then let it thaw out gradually by placing it in the chill room. Remember to use from one-fourth to one-third more of the thawed-out yeast, as freezing destroys some of the living cell structure of the yeast.

DRY YEAST is stored in a cool, dry, well-ventilated place. It will keep well for six months at 70° F. but will last over a year if kept in the chill room. Since there is no moisture to expand on freezing, dry yeast is not harmed by freezing. But it must be thawed slowly in the chill room. Inspect yeast often for insects.

FRUITS AND VEGETABLES

FRUITS and VEGETABLES, when purchased in hard frozen form, may be stored at 0° F. for over a year. Serve them immediately after thawing if they are to be eaten raw. You may cook them without first thawing them if you wish. You'll find it a good idea to follow the directions given on the carton.

If possible, keep FRESH (unfrozen) FRUITS in a storage compartment by themselves in order to provide them with enough moisture and to prevent their odors from getting into other foods. The temperature should remain at about 40° F. and the fruit must be kept moist to prevent drying and wilting. Good air circulation is important. Use a fan, if necessary. BANANAS must be handled a bit differently. Use a higher temperature to help them to ripen and to prevent them from becoming black.

It is necessary to handle fresh fruit with special care to avoid bruising or skinning. Sort out any damaged fruit. In general, fresh fruit should not be frozen

(unless purchased in that form), or kept in direct contact with ice.

POTATOES, CARROTS, TURNIPS, and other ROOT vegetables last for several months at 40° F. and even longer if the temperature is maintained at the freezing point.

PEAS, BEANS, SPINACH and other GREEN or LEAFY vegetables may last for 30 days at a temperature just above freezing. At higher temperatures they last for only a few days.

If your ship does not have a chill room, put the fresh vegetables in a well-ventilated locker and protect them as much as you can from heat. BUT don't let them freeze. Sort through these vegetables often and throw out the spoiled ones in order to save the rest.

Under the usual locker conditions, tomatoes may become overripe and soft in less than a day. Fresh peas and beans wilt and become tough in 24 to 36 hours. Lettuce and spinach begin to get slimy, and corn on the cob toughens and dries out in two days. After four days, asparagus wilts and toughens, cauliflower begins to decay; celery becomes wilted and stringy; and radishes get very woody. Eggplant lasts six days before it gets tough, and peppers soften up in about the same time. Turnips, cabbage, and carrots last 10 to 15 days. Sweet potatoes keep for as long as 20 days, and Irish potatoes remain good for a month.

MEAT AND POULTRY

Frozen meat and poultry keep fairly well at temperatures as high as 20° F., but temperatures of 0° F. or below are much better. Meat and poultry will remain good indefinitely if frozen solid.

In hot weather, try to load frozen meat during the early morning or after sundown. Hang hard frozen beef quarters, sides of veal, etc. on rails. Pack them

tightly, if necessary, but leave the wrappings on. Stack hard frozen packages or tins of meat any way that you find convenient.

If the meat is already cut, thaw it as a part of the cooking process. Otherwise, thaw it slowly at temperatures just above freezing (32° to 40° F.). If large chunks of meat are thawed at a high temperature, there is danger that the outside will begin to spoil before the inside is defrosted. Meat and fish should not be thawed by immersion in water because part of the taste and much of the food value are absorbed by the water. It takes from 12 to 24 hours to defrost poultry or fish. Beef quarters take from 36 to 48 hours.

Fresh, unfrozen meat stays good for only a few hours in the chill room. Beef lasts the longest. Use fresh pork, lamb, or veal promptly. Variety meats like liver, heart, and kidney do well if frozen but don't keep long under ordinary refrigeration. Keep bacon, ham, and cured meats at from 0° to 45° F. At 45° F. they remain good from two to four months. At 0° F. they keep much longer. Smoked sausage does best at about 45° F.

SEA FOOD

Live OYSTERS in the shells last for about two months at 32° F. If you plan to use them in a week or two, pack them in cracked ice and put them in the chill room. Add ice as it melts. Lay the oysters with the deep shell down so that the liquid will not run out if the shell opens a little. USE ONLY LIVE OYSTERS—that is, oysters with shells that are TIGHTLY closed.

After the oysters have been taken out of the shells, keep them in tightly covered tin containers at a temperature of from 30° to 32° F. Use freshly shucked oysters within six days. You can purchase quick-frozen shucked oysters; if kept frozen they will last much longer than six days.

LOBSTERS, CRABS, SHRIMPS, and FISH ought to be hard frozen if you intend to keep them for more than a few days. If possible, place them in a compartment where the temperature is below zero.

OTHER THINGS

Stow SALT on dunnage in a dry place so that it won't cake and harden. Salt keeps for a long time if you take proper care of it.

Plan to keep cucumber PICKLES for nine months to a year only—they begin to get soft if kept longer. If they are in glass containers, keep them away from light or they'll get discolored.

FLAVORING EXTRACTS must be stored away from the light and in airtight containers. After several months they will begin to lose strength.

It is essential to handle SPICES with care because damaged containers will admit a little air and the flavor will evaporate. Tin containers are best as paper containers absorb some of the oil in the spices. Insects thrive on some spices.

Stow containers of VINEGAR in dry storerooms on racks at a temperature above 40° F. Keep them away from sacks of provisions. If "mother of vinegar" or the "vinegar eel" appear, remove it by filtering the vinegar through cheese cloth. Then heat the vinegar to 145° F. for 30 minutes. Seal it in sterilized containers so that no air will get in.

Keep MAYONNAISE, MUSTARD, SALAD DRESSING, TOMATO CATSUP, and CHILI SAUCE at a moderate temperature. These will remain in good shape for a year if handled right. Rough handling is particularly bad for mayonnaise.

Put LARD and LARD SUBSTITUTES in a place where the temperature is around freezing. After lard has been softened by heat it is almost impossible to bring it back to normal consistency. Keep COOKING and SALAD OILS in the same way—though they last longer

than lard. Stow on racks or gratings above the deck. Keep them away from provisions packed in sacks.

DEHYDRATED PRODUCTS

The chief advantage of dehydrated provisions is that large quantities can be stored in a small space. One ship loaded with dehydrated products can carry as much as six loaded with regular provisions. (Figure 10).

SHIPPING SPACE REQUIRED FOR DEHYDRATED PROVISIONS



SHIPPING SPACE REQUIRED FOR FRESH PROVISIONS

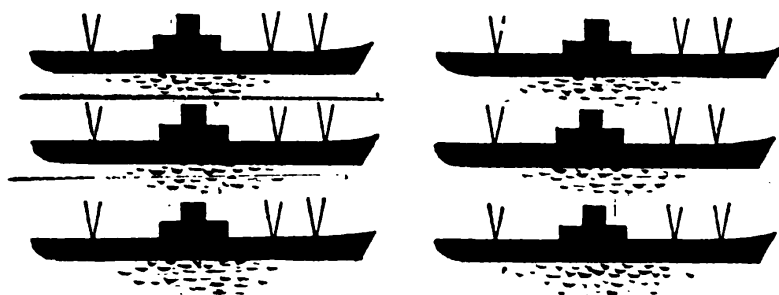
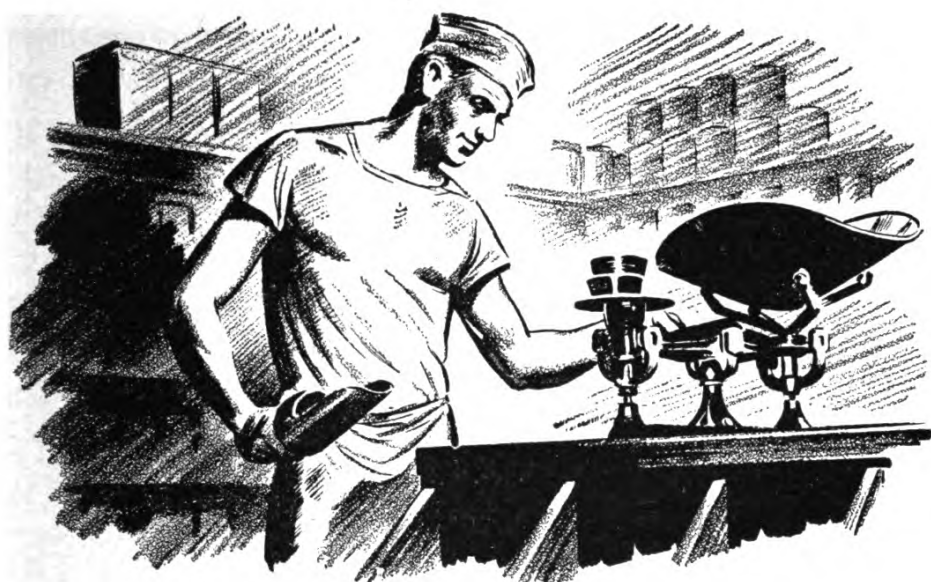


Figure 10.—Dehydrated vs. regular provisions.

But—it isn't just a matter of loading these dried provisions on the ship. The TEMPERATURE of the storage space is extremely important. Dehydrated cabbage lasts only three months if kept at a temperature of 98° F., but will last 15 months, or five times as long if kept around 60° F. The same is true for potatoes. All dehydrated foods last longer and keep better if they are kept in a cool place. Dehydrated foods must also be kept dry and insect-proof.



CHAPTER 5

ISSUE AND DISPOSAL OF PROVISIONS

GETTING PROVISIONS INTO THE GALLEY

It takes 100 five-ton truck loads to provision one of your Navy's new battlewagons. Where is all that stuff put?

You've already learned that the canned goods and other dry provisions such as flour and sugar are stored in the bulk storeroom. The meats are placed in the cold storage compartments and the fresh fruit and vegetables are put in the vegetable lockers.

How do all these provisions get from their storage places to the galley where they are to be used? The dry provisions are issued by the storekeeper in charge of the bulk storeroom to the JACK OF THE DUST who is in charge of the issue room. The jack of the dust issues the dry provisions to the galley as needed.

The SENIOR BUTCHER prepares and issues the meats directly from the cold storage compartment to the galley. The SPUD COXSWAIN supplies the galley with fruits and vegetables taken from the fruit and vegetable lockers. Figure 11 shows how this works out.

The method of ordering provisions for the galley varies with different ships. Some kind of simple local FORM for listing the items needed is usually set up. This form is prepared each day by the cook in charge of the galley and approved by the chief commissary steward. In fact, the cook will need to fill out three lists—one for the meats, another for the dry provisions, and a third for fresh vegetables. These forms, often called WORK-SHEETS, are delivered to the senior butcher, the jack of the dust, and the spud coxswain

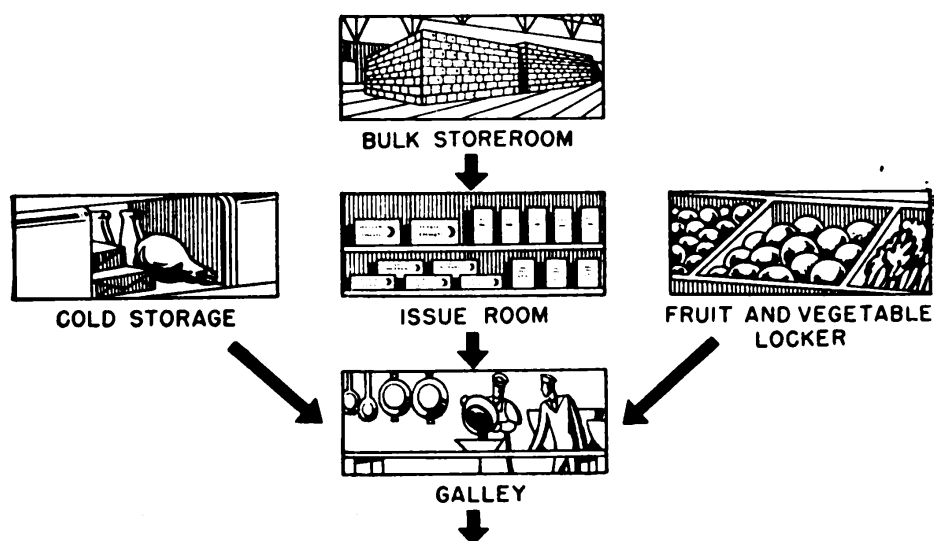


Figure 11.—How provisions get to the galley.

in plenty of time to get everything ready. In the case of frozen meats, enough time must be allowed for the meats to be properly thawed.

HOW MUCH SHALL BE ORDERED

How does the cook in the galley know what and how much to order? The KIND of provisions ordered depends on the menu for the day as set up in the weekly bill-of-fare.

The AMOUNT ordered depends upon the number of men to be fed in the general mess.

Suppose the menu calls for Salisbury steaks. The first thing to do is to look up the recipe for Salisbury

steak in your *Navy Cook Book*. It will tell you that you need 31 pounds of boneless beef to feed 100 men. But you're only feeding 25 men. So a little simple arithmetic is necessary— $25/100$ is $\frac{1}{4}$. Therefore, you need $\frac{1}{4}$ of 31 pounds of beef. And—

$$\frac{1}{4} \times 31 = 31/4 = 7\frac{3}{4} \text{ lbs.}$$

The amount needed is over 7 pounds, so you order 8 pounds.

But—suppose 58 men eat in your general mess. What then? When the number cannot be changed to a simple, easy-to-handle fraction, do the problem this way—

Multiply the NUMBER OF MEN to be fed by the RECIPE AMOUNT—like this—

$$58 \times 31 = 1,798$$

Then place a decimal point in front of the SECOND number from the RIGHT—thus, in this case, 17.98. Make it 18 pounds of boneless beef on your order.

If this arithmetic bothers you, get a copy of the Basic Navy Training Course, *Mathematics* and study the sections on fractions and decimals.

ANOTHER EXAMPLE

The menu calls for buttered fresh peas. This time you are going to serve 171 men. How much will you order?

The *Navy Cook Book* recipe indicates that 60 pounds of peas are needed for 100 portions. Multiply the number of men to be fed by the 60 pounds—like this—

$$171 \times 60 = 10,260$$

Place a decimal point in front of the SECOND number from the RIGHT—and you have 102.60. So—order 103 pounds of peas from the spud coxswain, who will see that the peas are shelled and prepared for use.

STILL ANOTHER CASE

An additional step in arithmetic is necessary if your general mess feeds more than 500 men. Suppose you need to prepare salmon salad for 637 men. The recipe calls for 20 No. 1 tall cans of salmon for 100 portions. Proceed as before. Multiply—

$$637 \times 20 = 12,740$$

Place a decimal point in front of the SECOND number from the RIGHT. This gives you 127.40. Now for the additional step. For messes feeding between 500 and 1,000 men, you have to reduce the amount thus determined by 5 percent. Do it like this—

Write 5 percent as a decimal (.05), and multiply the number of cans by .05. Thus—

$$127.40 \times .05 = 6.3700$$

Note that the decimal point is now in front of the FOURTH number from the RIGHT. Next, drop the last two numbers, and subtract the 6.37 from 127.40. Like this—

$$\begin{array}{r} 127.40 \\ -6.37 \\ \hline 121.03 \end{array}$$

Order 121 of the No. 1 tall cans. Get them from the jack of the dust.

A FINAL PROBLEM

The menu calls for fried liver. There are 1,238 men to be fed. How much liver is needed? According to the recipe, 35 pounds are needed for 100 men. So, you multiply—

$$1,238 \times 35 = 43,330$$

Now place a decimal point in front of the second number from the right, and get 433.30.

BUT for messes over 1,000 men, the figure determined in this manner must be reduced by 10 percent. It is done this way—write 10 percent as a decimal (.10), and multiply—

$$433.30 \times .10 = 43.3300$$

Again you will have FOUR numbers to the RIGHT of the decimal point.

Next drop the last two numbers and subtract—

$$\begin{array}{r} 433.30 \\ -43.33 \\ \hline 389.97 \end{array}$$

So you order 390 pounds of liver from the senior butcher.

WHAT'S THE COST

You may have to assist the chief commissary steward in figuring the costs of the food used. Here's what you do—

Multiply the UNIT COST OF EACH ITEM by the NUMBER OF UNITS used. For example, if boneless beef costs \$.146 per pound and you used 22 pounds you can find the TOTAL cost by multiplying these two figures together.

$$\begin{array}{r} \$.146 \\ \times 22 \\ \hline 292 \\ 292 \\ \hline \$3.212 \end{array}$$

The total cost is \$3.21. Show the answer through only two numbers to the right of the decimal point. If

the third figure to the right of the decimal is 5 or more, add ONE to the second figure and drop the third. If the third figure is less than 5, cross it out and forget about it. Thus, \$4.278 is written \$4.28; and \$4.273 is written \$4.27.

RATION COSTS PER MAN

A ration is the food fed to ONE man in ONE day (3 meals). Each ship is allowed to spend only a certain amount for a ration. It is necessary to compute the cost of rations every day in order to keep within the limit of the ration cost. Consult Chapter 13 of the *BuSandA Manual* if you need to know the various ration costs allowed.

To find the ration cost, determine the total cost of all the provisions used during the day. This is done by adding together all the costs of provisions issued. Then, divide this total by the number of men in the mess.

For example, suppose that aboard your ship on a certain day you fed 69 men and the total cost of all the provisions used was \$59.85. You find the ration cost by dividing \$59.85 by 69. Here it is—

$$\begin{array}{r}
 \$ \quad .86739 \\
 \hline
 69 \overline{) \$59.85} \\
 \underline{55 \ 2} \\
 4 \ 65 \\
 \underline{4 \ 14} \\
 510 \\
 \underline{483} \\
 270 \\
 \underline{207} \\
 630 \\
 \underline{621} \\
 9
 \end{array}$$

NOTE: General messes at most shore stations operate on a different plan. They use a RATION IN KIND instead of a money ration. "In kind" means food. This ration in kind must conform to the Navy Ration listed on page 74 of this book. It is discussed more completely in Chapter 13 of the *BuSandA Manual*.

For convenience in record keeping and handling, only a relatively small quantity of provisions is kept on hand in the issue room. Nevertheless, the jack of

Figure 12.—Stock tally card.

55

A STOCK TALLY CARD system is sometimes used to help the jack of the dust keep track of the provisions he has on hand and what he needs to order. These stock tally cards MUST be used in the bulk storeroom. Look at figure 12.

The stock number is the *Standard Stock Catalog* number. Notice that the description of the article is complete. The low limit refers to the smallest quantity that should ever be on hand. When this low limit is approached, more of the article should be ordered.

The arithmetic involved is simple. When provisions are received, indicate the amount received in the RECEIVED column and add this amount to the previous balance to get the new balance. When provisions are issued, indicate the amount issued in the ISSUED column and subtract this amount from the last balance to get the new balance. All you need be able to do is add and subtract. Check the addition and subtraction in figure 12.

ORDERING FROM BULK STOREROOM

Under NORMAL conditions, bulk storerooms are Naval Stock Account storerooms—the provisions put in them are paid for out of the Naval Stock Fund—these provisions are charged against the ship ONLY after they are issued for use.

To eliminate paper work during WAR, the ship is charged with the provisions as soon as they are put in the storerooms of the ship. In either case, the job of ordering and getting provisions by the jack of the dust is the same.

Provisions are ordered from the bulk storeroom on the STUB REQUISITION, S. and A. Form No. 307. Notice how the sample of this form shown in figure 13 is filled in.

The 7-45 in the upper right hand corner indicates that this stub requisition is the seventh one written for the issue room since 1 July 1945. Stub requisitions are numbered in order beginning with the first one written each 1 July.

J. F. Jones, the chief commissary steward, signed the requisition by authority of the supply officer. The number and description of the sugar ordered is found in the *Standard Stock Catalog* which is available in the supply office.

S. & A. Form No. 307 Revised April 1938		Stub Requisition No. <u>7-45</u>			
U. S. S. <u>CALIFORNIA</u>		15 July, 1945			
To Supply Officer: Request following stores be delivered to bearer for use in the Department. Provisions Issue Room					
By authority of Head of Department. <u>J. F. Jones C.C.S., U.S.N.</u>					
STANDARD STOCK CATALOG No. OR CLASS NO.	DESCRIPTION OF ARTICLE	QUANTITY REQUIRED	UNIT OF QUANTITY	UNIT PRICE	EXTENSION
56-S33550	SUGAR, White, Hard				
	Refined (Type 1) Gran (Class-1)	2000	Lb.		
Received the above material.					TOTAL
ISSUED BY: <u>J. Sawyer</u>		Charged on Ledger, _____			
<u>F. L. Wise</u> Storeroom Keeper.		Allotment charged, _____			

Figure 13.—Stub requisition.

The signature of S. Sawyer indicates he received the provisions from the bulk storeroom. The signature of F. L. Wise, SK 3c indicates he was in charge of the bulk storeroom when the provisions were withdrawn. The rest of the form is filled in later by a storekeeper.

SALES TO MESSES

Special messes for officers are set up aboard ship—the number depending on the size of the ship. The flagships of the fleet have a flag officers' mess, a cabin mess, a wardroom mess, a junior officers' mess, and a chief petty officers' mess. Where do these messes get their provisions?

They may buy provisions wherever they wish. Your only interest in them is when they buy from the stock of provisions belonging to the general mess. Article

1408 of Navy Regulations gives them this right under certain conditions.

Sales to special messes must be approved by the commanding officer after the supply officer has determined that the provisions can be spared without unduly reducing the quantities for general mess issue. The sales are to be made at regular cost price. Deliveries will be made only at the regular times and places of issue.

As far as possible, fresh meats are to be sold in original pieces—beef in quarters, veal in sides, and lamb in carcasses. If for any reason this is not practicable, sales are to be made in as large quantities as possible. Tables are published in Chapter 13 of the *BuSandA Memoranda* showing the percentage of the quarters, sides, and carcasses of certain cuts of beef, lamb, and veal, together with the percentage of the average cost price to be charged for these cuts.

Sales of frozen beef to special messes should be made in unbroken packages if possible. Each special mess should be charged with the appropriate percent of the average cost price. This percent is also found in Chapter 13 of the *BuSandA Memoranda*. For example, beef, fresh frozen, boneless to be used for ROASTING or FRYING is worth 145 percent of the average cost price. Beef, fresh frozen, boneless to be used for GROUND BEEF is worth only 55 percent of the average cost price.

Suppose the average cost of beef, fresh frozen, boneless is \$.26 per lb. The roasting and frying beef must then be sold for $.26 \times 1.45 = \$.377$ per lb. Look—

$$\begin{array}{r} 1.45 \text{ (145\%)} \\ .26 \\ \hline 870 \\ 290 \\ \hline .3770 \end{array}$$

The ground beef meat must be sold for $.26 \times .55 =$
\$.143 per lb. Look again—

$$\begin{array}{r} .55 \text{ (55\%)} \\ .26 \\ \hline 330 \\ 110 \\ \hline .1430 \end{array}$$

A special mess must buy equal amounts of the various types of meat cuts. It is not allowed to buy only the preferred cuts—the poor must be taken with the good. This is true of both fresh and frozen meats.

Sales to a special mess at a shore station within the continental limits of the United States can be made only after approval by the Bureau of Supplies and Accounts. This bureau can also authorize the furnishing of meals by the general mess to officers at shore stations where officers' messes are not maintained. •

Provisions are ordered by a special mess on stub requisitions like the one shown in figure 13. These requisitions are made out in duplicate. The originals are kept in the issue room or in the supply office. They furnish a day to day record of the sales to special messes. At the end of the month, the requisitions are totalled and the RATION VOUCHER AND STATEMENT OF SALES TO MESS is prepared. This statement informs the treasurer of the special mess how much is owed for provisions bought during the month. The treasurers of the special messes must pay their bills promptly at the end of the month.

SURVEYS

You have been told to be on the lookout for spoiled provisions. But what happens when you find some?

First of all, take immediate steps to see that spoiled provisions are not used. Lay them aside or mark them somehow so there will be no mistake. Next, notify your superior. If he agrees that the provisions are no

good, he will see that a request for a survey is made. The captain always appoints some officer, probably the medical or junior medical officer, as surveying officer for provisions. This officer makes a careful inspection, and then indicates whether or not the goods can be destroyed.

Every item of provisions surveyed and disposed of is promptly recorded. The record shows the exact quantity, condition, cause, responsibility and disposition of the items. Each entry is signed in ink by the surveying officer, who also indicates his rank and title.

If the provisions to be surveyed are worth more than \$100, the commanding officer may appoint a survey board of three officers to conduct the survey. This board makes its report to the commanding officer who approves or disapproves the findings. The supply officer is then notified and he handles the surveyed items according to the captain's wishes.

GETTING RID OF THE GARBAGE

Aboard ship, the first lieutenant is responsible for disposing of the garbage. At shore stations, it is the commissary officer's responsibility. Some ships have slop chutes, down which the garbage is poured; on other ships, the garbage must be tossed over the side. In danger areas, such disposal is always made at night.

In port, where the disposal of the garbage in this manner would be a menace to the health of the people living nearby, the garbage must be burned or disposed of in some other way that will cause no harm.

In all ports regularly visited by ships of the fleet, contracts are made with local concerns for the disposal of the garbage in a clean, efficient manner.



CHAPTER 6

FOOD—WHAT IT IS

FULL SPEED AHEAD

Remember those week-end trips to the seashore, the mountains, or to the city? Everything was swell until the engine in your car began to miss and finally stopped. What did you do? Looked for a gas station, of course.

Just as your car needs gasoline and oil in order to run, so does your body need food in order to function. But food isn't quite as uniform in standard as gasoline. There are many kinds of food and your body is particular about the kind it gets.

For example, foods like bread and potatoes will provide you with a great deal of energy whereas meat and cheese will help you to rebuild and repair worn out tissues. You'll also need certain vitamins and minerals in order to keep in ship-shape condition—to help you fight sickness, an enemy that kills more men than guns ever kill. You—and all the men aboard—must have the right **QUANTITIES** and the right **COMBINATIONS** of food, so that you will be ready in an emergency to work efficiently at high speed.

HOW MUCH FOOD

Gasoline—the food for your car—is measured by the gallon. Food for your body is measured by the CALORIE. The calorie is a way of measuring the heat and energy value of food. A pint of milk contains 313 calories—a pint of beer has 230. The fatty foods are richest in calories—one pound of butter contains 3,225 calories.

The number of calories you need depends on both the type of work you're doing and your physical makeup. Thus, a man doing desk work may need only 2,500 calories a day—a man performing active ship-board duties may need about 3,000 calories a day—and a man taking boot training may need 3,400 calories of food per day. Also a 200-pound sailor may need 700 calories per day more than a 125-pound sailor.

But REMEMBER, if you follow the suggestions for menu planning given in your *Navy Cook Book* and in Chapter 7 of this book, you won't need to take time to count calories in your menus. These menus automatically provide the right amount of calories.

THE RIGHT COMBINATIONS

It is more difficult to determine the RIGHT COMBINATIONS than it is to determine the correct quantities of food.

In a well-balanced diet, from 55 percent to 70 percent of the food calories should be provided by carbohydrates; from 20 percent to 30 percent should come from fats; and from 10 percent to 15 percent should come from proteins. Figure 14 gives you an idea of how these amounts compare with each other.

A healthy sailor must have enough of each of the three types mentioned as each type serves a different

purpose. He'll also need a sufficient supply of VITAMINS and MINERALS.

Most foods contain all these necessary elements in a greater or lesser amount. Some foods are rich in nearly all of them. One day you might serve potatoes to furnish the necessary carbohydrates, and on another day, let bread and butter fulfill this requirement.

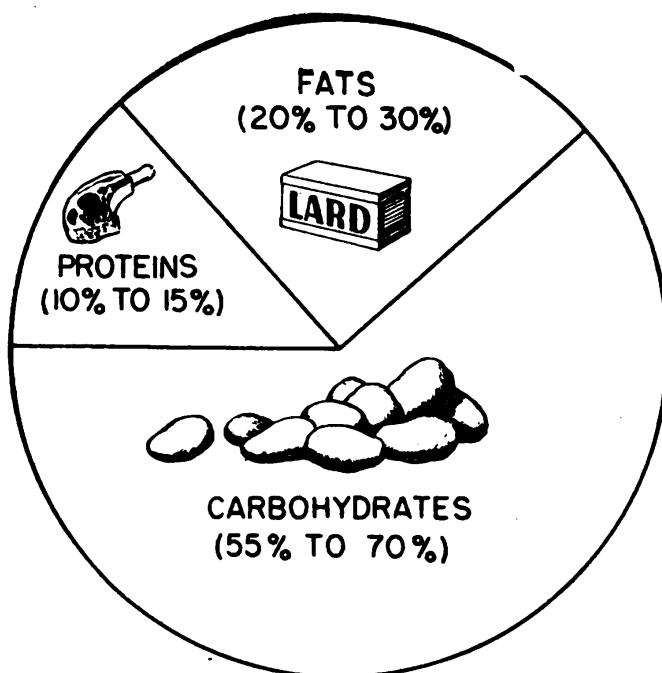


Figure 14.—Proper food combinations.

Now—what are these proteins, carbohydrates, fats, vitamins, and minerals?

PROTEINS AND MINERALS—THE BUILDER UPPERS

PROTEINS are the builder uppers of your muscles and other soft tissues of your body. They also lend a hand in providing energy and in aiding digestion. They provide an important part of the blood. In fact, the proteins affect most of the body functions in one way or another.

How are you going to provide the necessary amounts of protein? Take a look at figure 15.

Meat is an excellent source of proteins, as are milk, eggs, fresh fish, and poultry. And American cheese contains more protein per pound than any other food.



Figure 15.—Muscle builders.

Soy beans are good sources of protein and Navy beans and peas contain large amounts of this food element.

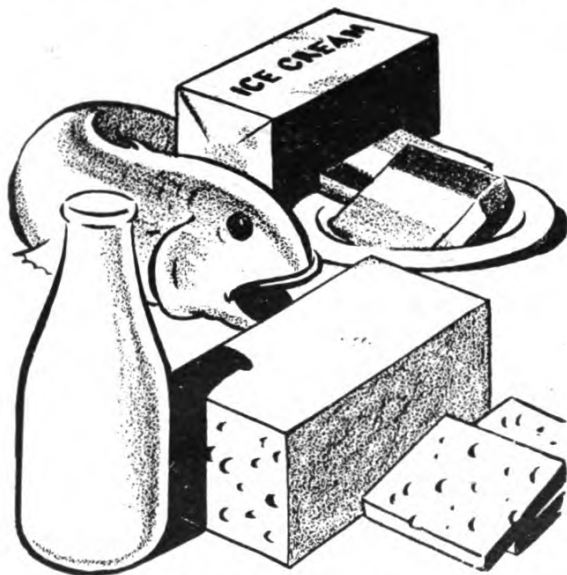


Figure 16.—Bone and teeth builders.

CALCIUM and PHOSPHORUS are MINERALS much needed by your bones and teeth to make and keep them strong and healthy.

Milk, cheese, fish, green leafy vegetables, and bread are excellent providers of these minerals (figure 16).

IRON

A little IRON is needed in the blood of every sailor. Iron builds up the red coloring matter in your blood and enables that blood to carry oxygen to all parts of your body. Without this oxygen in your body, you could not live.

Eggs are the best iron providers. Lean meat, especially liver, beet greens, dried beans and peas, and oatmeal are also good sources of iron (figure 17).



Figure 17.—Iron.

Some IODINE is needed to keep the thyroid gland operating properly. (Your thyroid gland is in your throat—it affects growth, excessive fatness and, in extreme cases, mental balance.) Iodine is provided in the iodized salt used by the Navy. About $\frac{1}{2}$ ounce of salt per day is needed by every sailor. If you are sweating a good deal, you need about twice this amount. Use plenty of salt during the hot weather. Salt tablets may be available to help provide the extra amount needed.

THE ENERGY FOODS

CARBOHYDRATES and FATS furnish most of the food needed for energy. These foods give the men pep and fit them for a good day's work.

White potatoes provide much of the needed CARBOHYDRATES although there are other foods that contain more carbohydrates per serving—sweet potatoes or peas, for example. Bread and breakfast cereals are good carbohydrate providers as are honey, sirups, candy, jams, and ice cream. Fruits contribute their share also, especially bananas, grapefruit, dried dates, figs, and prunes (figure 18).

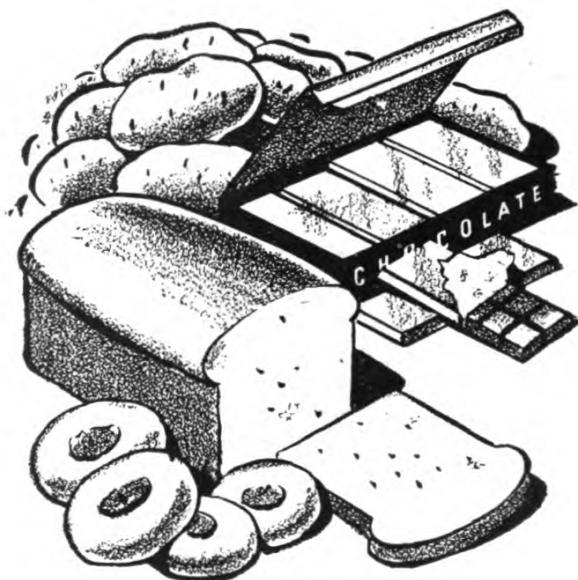


Figure 18.—Carbohydrate foods.

FATS provide fuel for immediate use as well as to build up a reserve energy supply. Fatty foods also keep the men from feeling hungry for a considerable period after they have eaten.

Bacon and other fatty meats are excellent sources of fat. Milk, butter, eggs, lard, peanuts, soy beans, and salad dressings are other good sources (figure 19).

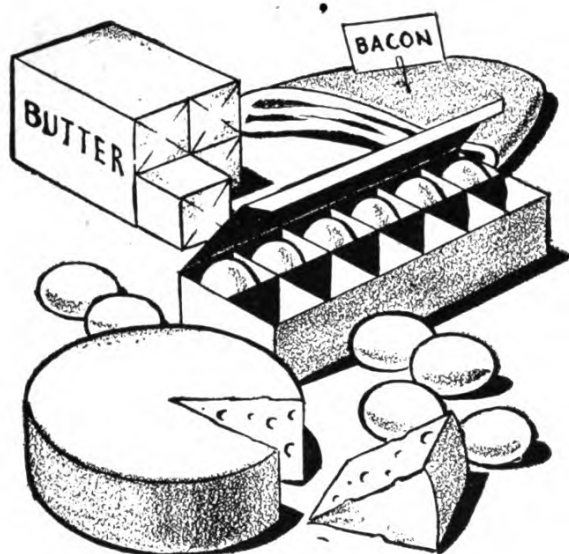


Figure 19.—Fats.

VITAMINS—THE DISEASE FIGHTERS

Ever wonder why British sailors are called “limeys?” Around about the year 1600, the British discovered that juices of oranges, lemons and limes prevented scurvy—a dread disease at one time prevalent in all the navies of the world. Hence a ration of lime juice became part of the daily diet of every British sailor. Scurvy soon disappeared from the British fleet, but the name “limeys” lingered on. The British didn’t know it then, but it is the vitamin C in citrus fruits that prevents scurvy. Other vitamins are helpful in preventing various diseases and weaknesses. You’ll want to know something about these useful vitamins.

Certain vitamins are destroyed if the food is not prepared properly and carefully. For example, vegetables lose very little of their vitamin and mineral content if cooked by steam. If you plan to cook vegetables in water, they should be cooked **ONLY** long enough to make them tender—and use the smallest possible amount of water. Heat salted water to a boiling temperature before you add the vegetables so they won’t need to be in the water very long.

Grate or chop vegetables for salads **JUST BEFORE** they are to be served. As far as vitamins are concerned, the larger the chunks the better. Let the men do a bit of chewing. It's good for them.

If the salads are allowed to stand exposed to the air before being served, many of the vitamins will be destroyed. The same is true for hot foods that are prepared too early.

VITAMIN A—THE GOOD EYESIGHT VITAMIN

Give the men plenty of butter, liver, cheese, eggs, yellow fruits, and green vegetables. These foods are rich in vitamin *A*. Variety foods like giblets and kidneys also are a good source for this vitamin (figure 20).



Figure 20.—Vitamin A sources.

Vitamin *A* helps keep your eyesight sharp, particularly your night vision. It also does much to keep you in good health.

THE VITAMIN B FAMILY

All the *B* vitamins dissolve in water. Save all your cooking waters. Use them in soups or gravies so that

the vitamins and minerals in the water will not be entirely lost.

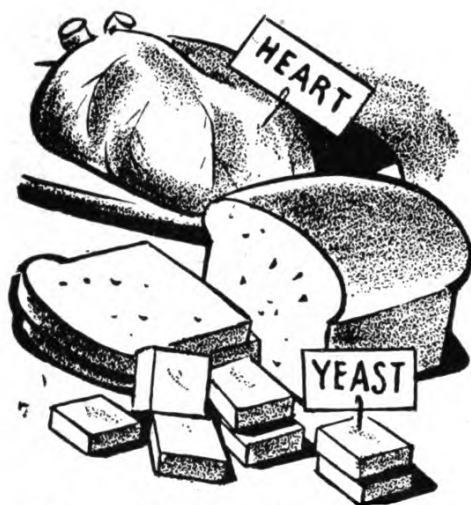


Figure 21.—Thiamin suppliers.

THIAMIN is the pep vitamin of the “*B* family.” It gives the men good appetites so they can really appreciate your cooking. Good sources of thiamin are liver, heart, kidney, yeast, bread, pork, beans, peas, whole grain breakfast cereals, and eggs (figure 21).

Thiamin is the vitamin most easily lost when meals are over-cooked.

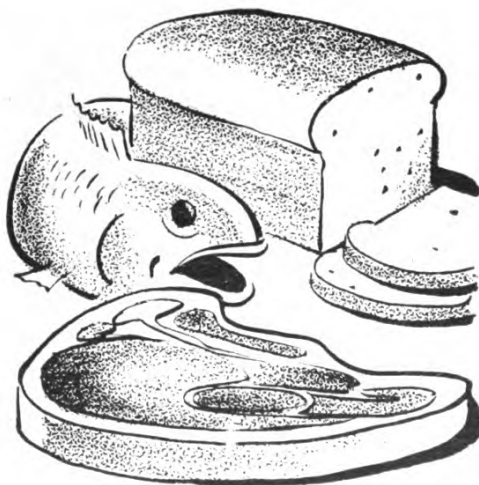


Figure 22.—Sources of niacin.

NIACIN, another *B* vitamin, keeps the men free from pellagra—a nervous or gastrointestinal disease

that is prevalent among those who live on corn bread and sow belly. Supply niacin by feeding the men meat, fish, whole grain bread, and vegetables (figure 22).

VITAMIN C—THE SAILORS' VITAMIN

Vitamin C helps make good teeth and gums. It fights infections in cuts and bruises and speeds up the healing of wounds. And, as you already know, vitamin C prevents scurvy.

Furnish a good supply of this vitamin by serving raw tomatoes, steamed or boiled potatoes, salads, and fresh fruits. The peelings of the citrus fruits have

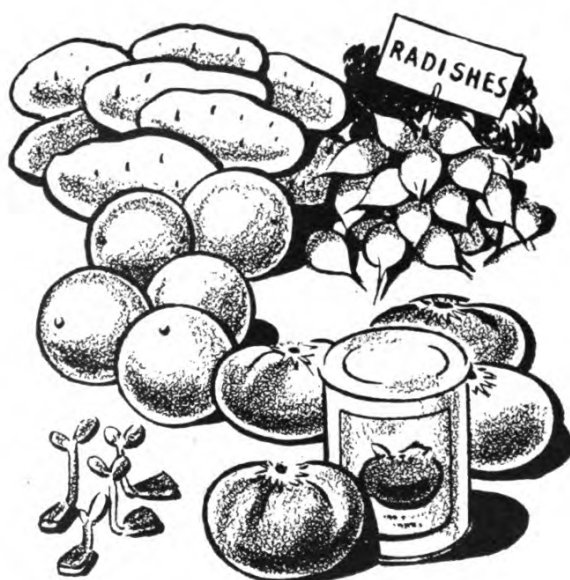


Figure 23.—Vitamin C foods.

about five times as much vitamin C as the insides. That makes marmalade a good source of this vitamin. Green leafy vegetables, melons, strawberries, peppers, and radishes also contain large amounts of vitamin C.

In a pinch, sprouted soy beans or any sprouted grain can be used to supply a limited quantity of vitamin C—at least enough to keep a person from becoming seriously ill (figure 23). Tea made from pine or other evergreen needles will do the same job in an emergency.

RIBOFLAVIN—THE ALL AROUND VITAMIN

Riboflavin is needed for proper growth. It prevents nervous depressions; general weakness, and poor condition of the eyes and skins.

Riboflavin is present in large quantities in milk and eggs. It is also found in liver, yeast, bread, and greens (figure 24).



Figure 24.—Riboflavin in these.

Riboflavin is easily destroyed. It dissolves readily in water and is injured by light.

WATER AND ROUGHAGE

In a way, water is more important than food. People have lived several weeks without food. Without water, they die in a few days. In fact, three-fourths of your body is water—believe it or not.

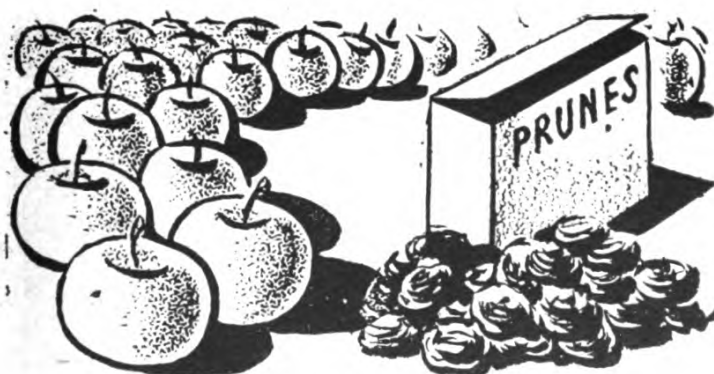


Figure 25.—Roughage.

ROUGHAGE aids the intestines in carrying off waste matter thus preventing constipation. Leafy vegetables (cabbage and lettuce), fruits, and whole grain bread are best for this work (figure 25).



CHAPTER 7

MENU PLANNING

WHAT DO WE EAT?

"When do we eat?" The skipper settles that question on board ship. But you may have a much harder question to answer. "WHAT do we eat?" In fact, you must prepare an answer to the question even before it is asked as you will have to make up the weekly bill-of-fare a week in advance.

The men aboard ship must have a well-balanced diet or they will become sluggish and unhealthy. How can you provide this well-balanced diet? By providing enough of the different types of food mentioned in Chapter 6 to meet all the requirements of the body. These types include body building foods, such as meats and eggs—and heat and energy chow, such as sugar and potatoes. Also, foods containing an adequate supply of the different minerals and vitamins must be included in the ration.

THE NAVY RATION

The Navy Ration was set up to insure that each sailor is fed a well-balanced diet. It indicates what should be fed each sailor in ONE DAY.

During the war emergency, this ration is not a requirement on all ships or stations, but it still furnishes a good example of a well-balanced diet. Use it as a guide in planning your menu. Here's the way it appears in the *BuSandA Manual*—

BREAD	12 ounces soft bread or flour or 8 ounces biscuit.
MEAT	12 ounces preserved meat or 14 ounces salt or smoked meat or 20 ounces fresh meat or fresh fish or fresh poultry.
VEGETABLES	12 ounces dried vegetables or 18 ounces canned vegetables or 44 ounces fresh vegetables.
FRUIT	4 ounces dried or 10 ounces canned or 6 ounces preserved or 16 ounces fresh, or 6 ounces canned fruit or vegetable juices or 1 ounce of powdered fruit juices or 6/10 of an ounce of concentrated fruit juices.
COFFEE	2 ounces of coffee or cocoa or 1/2 ounce tea.
MILK	1/2 pint fresh or 1 ounce powdered or 4 ounces evaporated.
BUTTER	1.6 ounces.
CEREALS	1.6 ounces cereals or rice or starch foods.
CHEESE	1/2 ounce.
EGGS	1.2 per day.
LARD	1.6 ounces lard or lard substitute.
SAUCES	2/5 gill oils or sauces or vinegar.
SUGAR	5 ounces.
AS REQUIRED	baking powder and soda, flavoring extracts, mustard, pepper, pickles, salt, sirup, spices, and yeast.

THE NAVY COOK BOOK PLAN

The *Navy Cook Book* gives another guide for menu planning. In it, foods are divided into basic classes—milk products, eggs, butter, meat, poultry or fish, legumes, cereals and bread, fruits and vegetables.

The stated amounts refer to what should be given ONE sailor in ONE day. You may find this plan easier to follow than the Navy Ration. Here's the way it works out—

One pint of MILK per day should be provided. This can be fresh, evaporated, or dehydrated. It can be used in cooking or served as a drink. Occasionally, cheese may be used in place of milk. Two and one-half ounces of American cheddar cheese are about equal in mineral and protein content to one pint of milk.

An EGG a day is a good rule to follow. Eggs may be fresh, frozen, or dehydrated. They are especially valuable for their protein, mineral, and vitamin A content.

Furnish part of the requirement of fat and vitamin A by serving 1 to 2 ounces of BUTTER daily.

One or more servings of MEAT, FISH, or FOWL will help provide the daily requirement of necessary proteins, minerals, thiamin, and riboflavin.

The LEGUMES include dried beans—kidney, lime, and Navy—and dried peas. All of these are important sources of proteins, minerals, and thiamin. The legumes are not as complete a protein as meat, so serve them as a supplement to the meat ration once or twice a week—never use them as a substitute for meat.

Two—or more—servings of CEREALS and BREAD are necessary every day. The cereals should be whole grain or have whole grain value. These cereals and bread made of enriched flour are excellent sources of energy, protein, bulk, and minerals, as well as the B vitamins.

Two—or more—servings of FRUIT daily are necessary. Fruits supply vitamins, minerals, and bulk. Use citrus fruits, such as oranges or grapefruit, often because they are two of the best sources of vitamin C. If possible, serve at least ONE fresh fruit.

Otherwise, fruits may be frozen, canned, dried, or dehydrated.

Plan to use at least two servings of VEGETABLES besides potatoes. Prepare at least one green or yellow vegetable each day—they supply vitamin *A* and iron. Greens, either cooked or in salads, should be served often. The same is true of tomatoes. The tomatoes are especially valuable for their vitamin *C* content.

WHAT PROVISIONS ARE AVAILABLE

Be sure of what you have aboard before you plan a menu. For example, it would be foolish to plan to serve strawberries if no strawberries are available. And, even if strawberries are available, they may be too expensive to use. Also, LIMITS are placed on the amounts you can spend each day for food. These limits apply to all shipboard general messes. The daily allowances vary from 60 cents per day per man for a ship with over 1,000 men eating in the general mess to 89 cents per man for a ship with less than 26 men. These amounts are subject to change so the exact amount for each size ship is not given here. Consult chapter 26 of the *BuSandA Manual* or chapter 13 of the *BuSandA Memoranda* to find the limit for YOUR ship. An extra 5 cents per day per man is added for ships and stations beyond the continental limits of the United States. Submarines are allowed 10 cents extra per day per man and newly commissioned ships may use an additional 5 cents per day per man for 30 days from the time it opens its general mess.

The season of the year also effects the menu both in the type of foods that are available and in the types of foods best to eat. During the hot summer months, give the men a liberal amount of cold plates, salads, berries, fresh vegetables, and fruits, light desserts, and cold drinks. During the cold winter months, be

sure to use hot soups, roasts, creamed dishes, starchy vegetables, heavy puddings and desserts, and hot drinks.

MAKE 'EM LIKE IT

It has been said, "you can lead a horse to water but you can't make him drink." Well, you can provide a well-balanced meal for your mess but you can't make the men eat it. They MAY not like it. And you'll soon find out about that. Good tasty meals are taken for granted by the men. That's human nature.

Any cook might occasionally serve a meal that isn't liked. But the good cook will find out what's wrong about it—and he won't make the SAME MIS-TAKE twice.

How can you make 'em like it?

An attractive COLOR SCHEME will help. Color contrasts that you get with white mashed potatoes, brown gravy, and green peas are excellent. Avoid having too many things of about the same color in any one meal. White potatoes, white cauliflower, and a white pudding appear very uninteresting. Salads made of fresh vegetable or fruit or of combinations of fruit and vegetables provide good color contrasts.

FLAVOR is important. Again, contrasts are necessary. Foods that have contrasting flavors tempt the appetite. The use of sour or sweet pickles, chili sauce, and other condiments help provide these contrasts.

The AROMAS of eggs frying and coffee boiling put men in the right mood for eating and help start the day right. Much of what you normally think of as taste is really smell. Do everything you can to make the odor of the food agreeable.

Contrasts in the FORM and TEXTURE of the chow make it more appetizing. Have some of the food solid and some in liquid form. Lima beans and stewed tomatoes set each other off effectively. Baked lima beans and baked potatoes make a combination that is unattractive in both appearance and palatability.

VARIETY is the spice of life—so you've heard. It is just as important in cooking. Anyone gets tired of eating the same kind of food over and over again no matter how good that food tasted the first time. And the men don't want to know in advance that they'll have hash EVERY Tuesday morning or fried fish EVERY Friday evening.

Give them pleasant surprises. Make use of as many different kinds of foods as possible. Sometimes you don't have to change things very much. The whole meal may seem different if you merely change one vegetable. And you can get all kinds of variations by changing the method of preparation. Take potatoes, for instance. They can be served cooked with jackets on, mashed, creamed, baked, roast browned, home fried, hash browned, parsleyed, au gratin, scalloped, French-fried, or stuffed and baked. You can probably add other ways to this list.

Now for some individual meal planning—

BREAKFAST

Start the day off right by serving fruit—fresh, if possible. Apples, pears, or melons are good. Citrus fruits—oranges or grapefruit—should be used often. Fruit juices can be used to advantage as alternatives.

Some kind of cereal is next in order. Cereals are fuel and energy foods and a source of minerals and vitamins. They also serve as carriers for another important food—milk. Serve hot or cold cereals depending on the supply, the climate, the likes and dislikes of the men, or the need for variety. When dry cereals are used, make several different kinds available so the men can select the brand they wish.

Provide milk and hot coffee every day. Variety in the bread ration can be obtained by serving toast, hot-cakes, rolls, muffins, hot biscuits, or French toast. The addition of jams, jellies, or sirups to any of these makes them more attractive.

The main dish for breakfast may be eggs one day, and hot cakes and sausage the next. When you serve eggs a second time, prepare them in a different manner. Other good breakfast dishes for active sailors are hash, fried mush, baked beans, and fried potatoes. Combinations of ham and eggs, bacon and eggs, or sausage and eggs are good, but the cost is so high they can't be served very often. Eggs can be combined with hash, or sausage combined with hot cakes without excessive cost.

DINNER

Noon chow is usually the main meal aboard ship. Soup may be served at either the noon or evening meal—whichever one needs that little extra something to make the meal complete. Make a well-seasoned soup. If the meal is heavy, make the soup light. If the meal is light, serve a heavy soup. When a vegetable soup is used, you may omit the salad from the meal if you wish. Soup is one way of getting men to eat a sufficient quantity of vegetables.

Make the noon meat dish the main meat dish for the day. Roast beef or veal, baked ham, or broiled steaks ought to be served as frequently as possible. Sea foods or poultry may be used for variation. Fish may be used any day, although tradition calls for its use on Friday. Plan to use gravy or sauce with most meats. But be sure you make a good, well-seasoned gravy.

Potatoes are the main carbohydrate dish. Plan to prepare them in different ways. Alternate dishes, commonly used, are beans—white, lima, or kidney—rice, noodles, hominy, sweet potatoes, and spaghetti.

Include a leafy vegetable, such as spinach or broccoli, and one other vegetable, such as carrots or peas.

A green salad may be substituted for the leafy vegetable. It is well to serve salads frequently. A great variety of salads can be made from all types

of vegetables. Once in a while, you can replace the salad with radishes, celery, olives, and pickles.

Desserts are used to top off the meal and to leave the men with "that satisfied" feeling. Sherbet is inexpensive and popular during the hot months. By making bread pudding for dessert, any leftover bread can be used—but don't overdo it. Other puddings are also good. And give the bakers a chance to provide good tasty pies, cakes, and pastries for dessert. Fruits can also be used to advantage. Cottage cheese and pineapple or fruit salads may be used as desserts.

Serve a hot drink during the winter, and hot and cold drinks on alternate days during the summer.

Occasionally serve hot rolls or corn bread in place of ordinary bread.

SUPPER

In the tropics—or for variety in any climate—make supper the main meal. On such occasions, the dinner suggestions apply also for supper.

Ordinarily, however, you can use low cost cuts of meats for supper. Make hamburgers, stews, or meat balls. Break the monotony occasionally by using chops or fried chicken. Macaroni au gratin, chop suey, chili con carne, or creamed fish are often used in place of the meat dish. The supper meal is also a good time to use leftovers from dinner. Make leftovers attractive in appearance and appetizing to the taste. If possible, plan to change them completely so they won't be recognized as leftovers. Combinations such as rice and stewed tomatoes, carrots and peas, cooked vegetables made into a salad, and meat and potatoes made into hash are a few examples of how leftover food may be used.

Potatoes need not be served as often for supper as for noon chow. Instead, use rice, spaghetti, or some of the other starch dishes. Bring in root vegetables such as carrots frequently. Leafy vegetables

and green salads should be used—especially if none was served for dinner.

Ginger bread or similar hot breads—with a sauce, jam, or sirup—make excellent supper desserts. Tea, cocoa, or fruit-ade may be used to break the monotony of coffee. If possible, ice the drinks during the hot weather.

PRACTICE MAKES PERFECT

The sample menus given on pages 8-11 in the 1944 *Navy Cook Book* are worthwhile studying.

Try PLANNING some meals on your own, even though you may not have a chance to actually use them. Then ask yourself a few questions—

Are these meals balanced?

Is there a good color combination?

How about the form and texture—are there good combinations? Do the flavors go well together?

Are the meals economical? Does the cost stay within the ship's limit?

Are all the foods available?

Is variety provided for?

Are the meals suitable for the season of the year?

Be satisfied only when you can answer yes to all these questions.

Get a good cook or commissary steward to check your TRIAL MENUS. He will be glad to do it, and undoubtedly will be able to give you some good suggestions.



CHAPTER 8

GALLEY AND BUTCHER SHOP EQUIPMENT

LIKE GRANDMA USED TO MAKE

You've often heard the expression, "this food is just like grandma used to make." Well, your grandmother struggled along with pretty crude equipment. Machines and tools your grandmother never even dreamed about are now being used to help you in the galley and butcher shop. Read as much as you can about these machines and tools. If possible, watch an experienced cook put them through their paces. Then, you may be ready to take over.

ELECTRIC RANGE

Electric ranges are made in sections. Figure 26 shows one section.

The plate tops are usually of cast iron or steel alloy so you can clean them easily.

The ranges either work on a 220 volt three-wire system or are especially designed to operate on the current of the vessel.

A simple-to-operate switch will give you three different degrees of heat—high, medium, or low.

Each range should have a bake oven which is large enough for the ship's use. The oven coils usually have a circuit breaker in the line to protect against overheating. The heat in the oven is controlled by a thermostat that can be set for the heat required. Each coil in the oven has an independent switch.

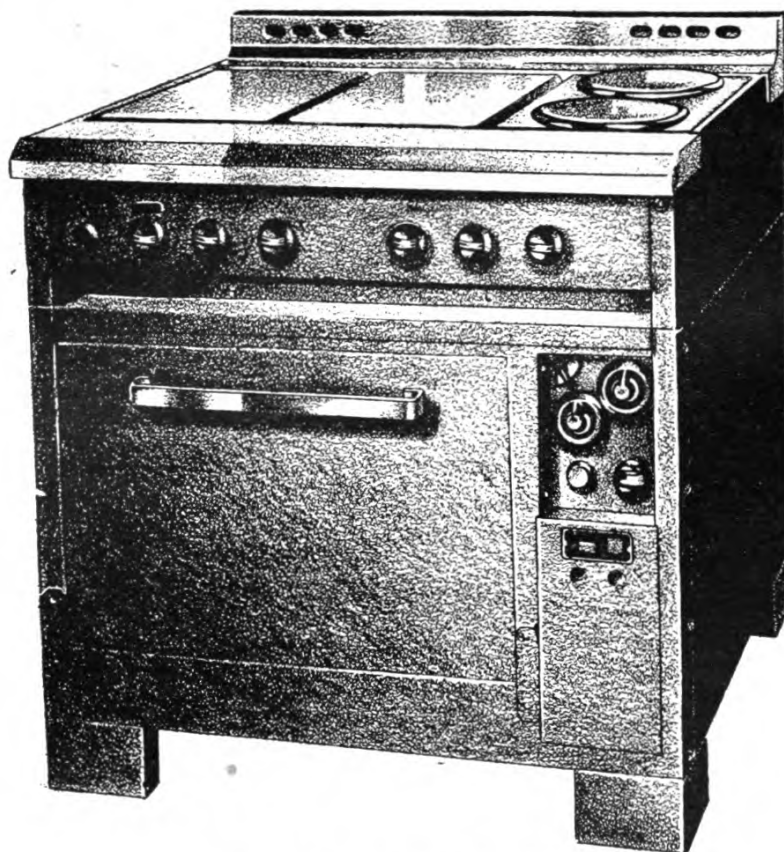


Figure 26.—Electric range.

Keep the range clean at all times. Pull the main switch when the range is not in operation. Report any defects immediately.

OIL RANGE

Most oil ranges used by the Navy are Navy standard, 3½ foot sections, consisting of a fire box, oven, and flue. See figure 27. Usually the oil is forced into

the range by air pressure. Sometimes steam is used instead of air pressure.

Drain the oil tank every day, just before you secure for the night, and refill the oil tank the first thing in the morning. This will prevent delay trying to get water out of the lines.

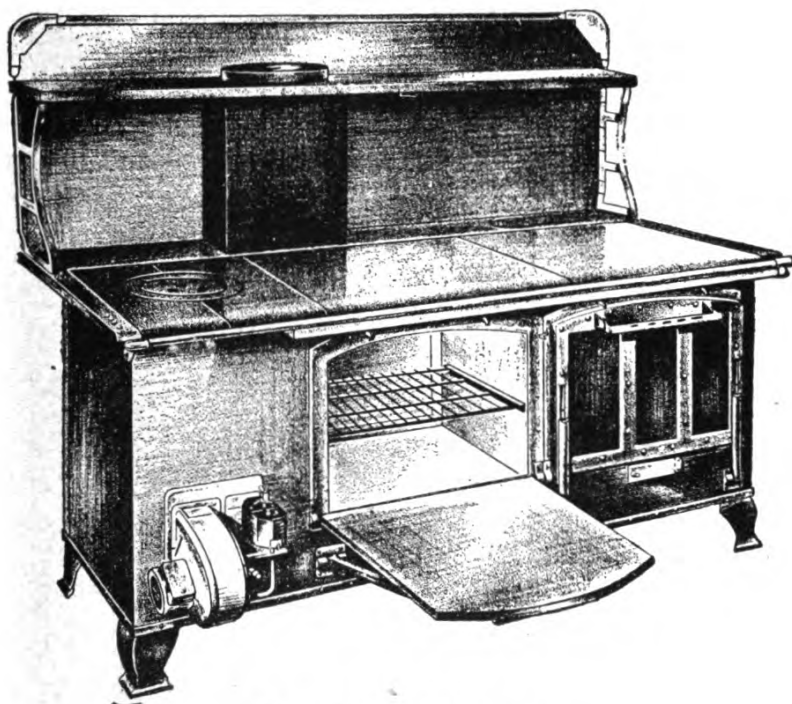


Figure 27.—Oil range.

After fires are hot enough, cut down the oil and air. This will keep the fire from getting too hot. It also keeps the amount of smoke down.

Clean all burners and flues thoroughly at least once a week.

USE OF SCALES

The set of scales is one of the most important pieces of equipment you have. For best results weigh everything you use. If the recipe calls for 165 pounds of meat, weigh out 165 pounds. Don't guess. This weighing will make it possible to keep an accurate record of provisions on hand and will aid you in preparing the correct amount of good, tasty food.

REFRIGERATORS

Refrigerators (one is shown in figure 28) must be kept clean at all times to prevent bad odors and to keep down growth of harmful bacteria and mold. Defrost the coils as often as necessary. Never let the ice become more than $\frac{1}{4}$ inch thick. Ice and frost act as insulators and reduce the efficiency of the equipment. Always melt the frost away. NEVER use an ice-pick or any other sharp tool.

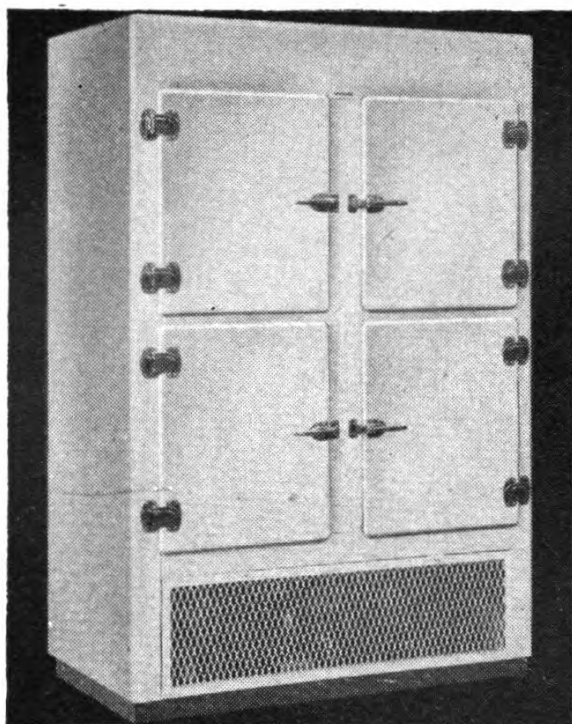


Figure 28.—Refrigerator.

VEGETABLE LOCKERS

Fresh vegetables need good ventilation. See that they get it by keeping the lockers clean and in good condition. Sort over the vegetables often. Remove all spoiled fruits and vegetables as soon as spoilage is discovered. Otherwise the spoilage will spread rapidly.

ELECTRIC MIXER

The electric mixer (figure 29) is used for mashing potatoes and other vegetables, mixing left-over meats, making mayonnaise and batters, and beating eggs.

One part of the machine revolves through the use of a set of transmission and differential gears. Vari-

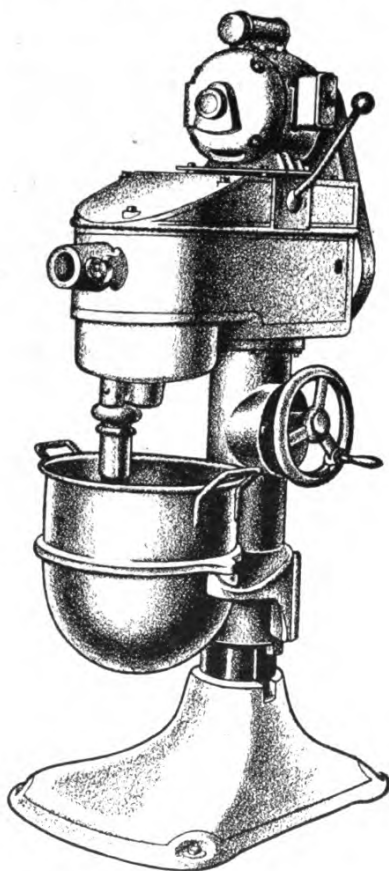


Figure 29.—Electric mixer.

ous shaped paddles and mixers (figure 30) can be attached to this revolving part.

The lower part of the machine contains two extended adjustable arms. A bowl, containing the foods to be mixed, is placed on these arms and the arms are then moved up so the paddles will revolve through the mixture. The bowls vary in size from 10 to 80 quarts. The machines have either three or four speeds.

Usually they have an attachment socket that can be used for a vegetable slicer and meat grinder.

Before using this machine be sure the bowl and paddles you intend to use are thoroughly cleaned with hot water. Then fasten the paddles to the machine. Fill the bowl NO MORE THAN ONE-HALF FULL—a heavier load may burn out the electrical mechanism. Place the bowl on the extended arms. Adjust the machine for the speed you wish before starting the motor. Start the motor by throwing the switch. Then grasp the arms holding the bowl and move them upward until the revolving paddles contact the items

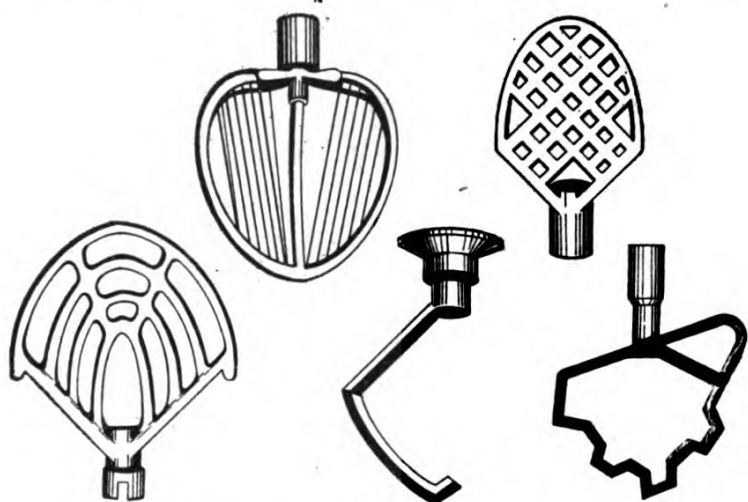


Figure 30.—Electric mixer attachments.

you wish to mix. WARNING—keep your hands away from the spinning paddles. Turn off the machine before you put your hands anywhere near them.

The mixer requires very little care. The gear casings need to be refilled with grease occasionally and the machine should be oiled once a day if it is used a great deal. Ordinarily this will be done by some one else. But you'd better see that it is taken care of.

BUTTER MACHINE

The butter cutting machine (figure 31) cuts butter into individual rations.

Place the butter in the box. Pack it tightly between the movable head and the die. Operate the handwheel. This pushes the butter through the die and cuts it into squares. It also operates the head on the outside of the box so that the butter is cut to a desired thickness. The machine can be fed with 8 pounds of butter at a time and cuts into 12, 16, or 20 individual squares at each turn.

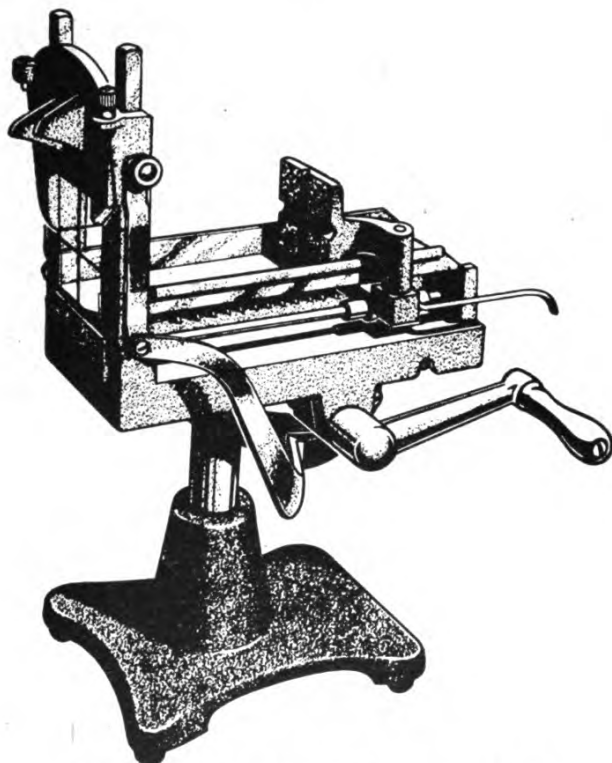


Figure 31.—Butter cutting machine.

The butter should be chilled but not frozen. Frozen butter will break the wires used for cutting.

You will find the machine easy to keep clean. Oil it only once in a great while.

COFFEE URNS

Coffee urns (figure 32) vary in size from 20 to 80 gallons. They are usually made of copper and lined with babbitt or tin. Steam is used for heating. A copper-tinned coil at the bottom of the urn runs through a trap. This trap holds live steam and allows

condensation to escape. The inlet is connected with the steam and the outlet connects with the trap. Before turning on the steam, be sure to OPEN the exhaust valve.

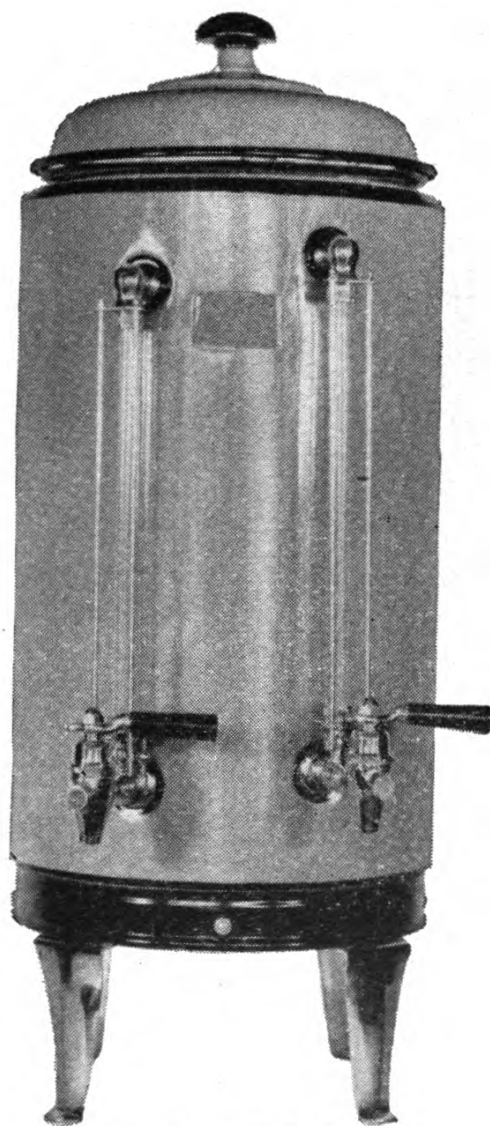


Figure 32.—Coffee urn.

The urns should be washed and scrubbed thoroughly after each using. Use hot water and urn cleaning powder only—never soap, or lye.

DEEP FAT FRYER

The FRIALATOR or deep fat fryer (figure 33) is used for preparing French fried potatoes, doughnuts, or any other food that needs deep fat frying.

Before using, be sure the drain valve at the bottom is closed. Then fill the container with frying fat up to the proper level. Leave room to insert the basket and its contents. Set the dial for the desired temperature and turn on the heat. CAUTION—Never turn on the heat when the container is empty.

When the food is cooked properly (see *Navy Cook Book* recipe for time required), hang the basket on the metal flanges provided and let the fat drain from



Figure 33.—Frialator.

the food into the tank. Read page 222 of this book to find out what to do with this frying fat.

Then drain the machine. Wash and scrub the machine thoroughly with a brush and plain boiling water. Drain all the water out and let the frialator dry

before using it again. Keep the machine covered when not in use.

COPPERS

Coppers are used for boiling and steaming vegetables, soups, and puddings. See figure 34. They vary in size from 20 to 80 gallons. Even though they are

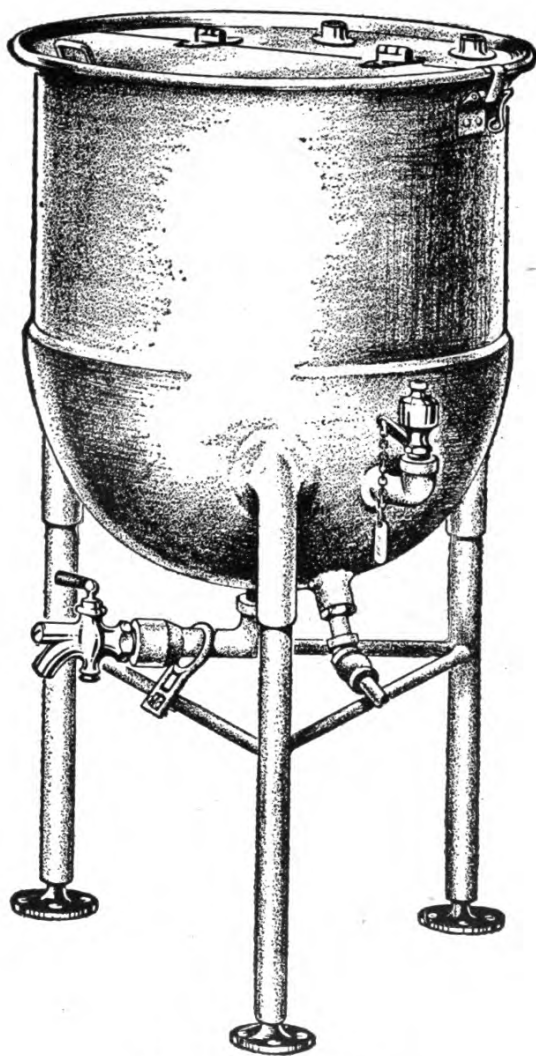


Figure 34.—Copper.

called coppers, they are usually constructed of aluminum or stainless steel. These coppers have an inside container and an outside jacket. The jacket is connected with a live steam line at the bottom so that steam can be forced into the space between the

jacket and the inside container. This steam is controlled by a pressure reducing valve.

Before turning on the steam, BE SURE the exhaust valve is OPEN or you may have an explosion. Grasp the ladles firmly when stirring so you won't drop them in the food.

After using, clean the coppers thoroughly with hot water and a good stiff brush. Use boiling hot water, if the copper is greasy—but NEVER use soda, soap, or lye.

FOOD SLICING OR BUFFALOING MACHINE

The food slicing machine (figure 35) is used principally for preparing soup and salad vegetables. An electric motor drives a shaft to which two knives

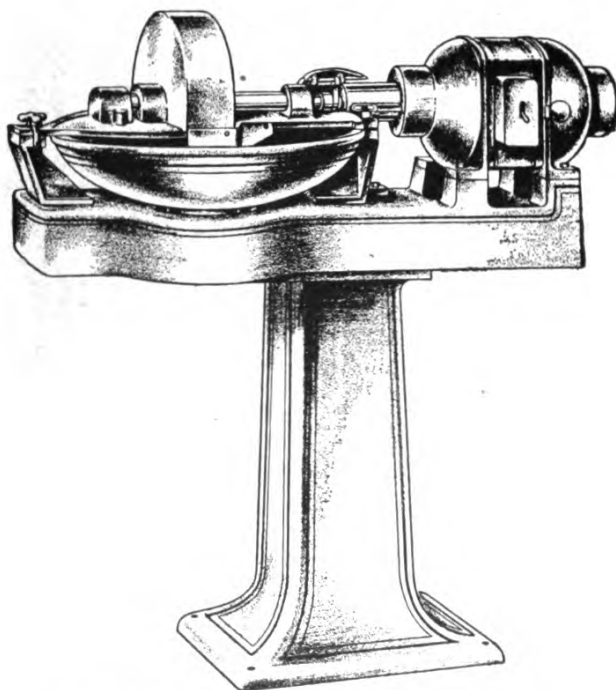


Figure 35.—Food slicing machine.

are attached. These knives revolve at about 1,800 revolutions per minute. The bowl in which you place the vegetables revolves at 50 revolutions per minute. The revolving bowl brings the vegetables into contact with the knives. As soon as the food is of the

desired size, stop the machine and remove the bowl. Clean and scour the bowl with hot water and a good stiff brush.

THE POTATO PEELER

The potato peeler (figure 36) is the answer to the spud coxswain's prayer. In five minutes it can peel more potatoes than he can peel by hand in an hour.

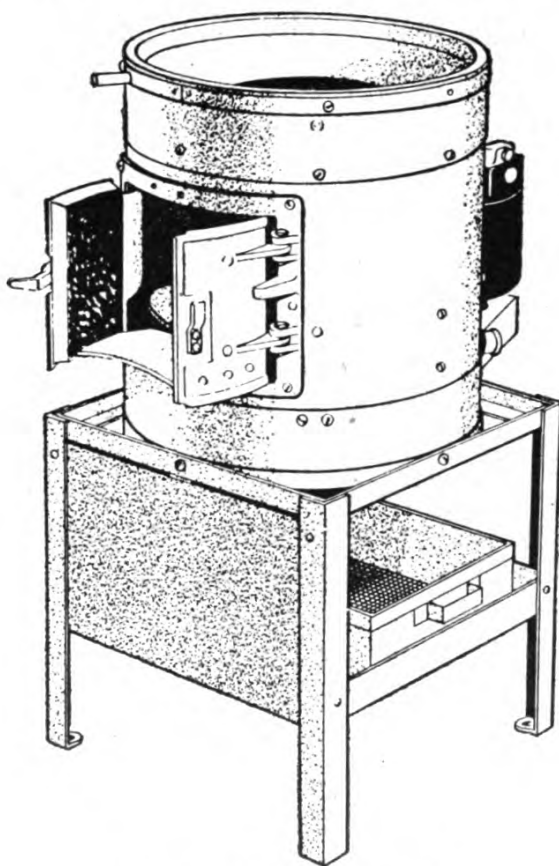


Figure 36.—Potato peeler.

Before you use the machine, sort the potatoes so that those in any one load are of about the same size.

The mechanism of the machine is simple. It consists of a circular drum that is roughly glazed on the inside. The base of the drum, also roughly glazed, revolves swiftly by means of an electric motor. The potatoes are put through an opening in the top part of the drum. The revolving base throws the potatoes against the rough surface of the sides. These rough

surfaces rub the skins off the spuds in the same way that sandpaper smooths off a piece of wood. Water is made to run over the potatoes continuously in order to carry away the waste and peelings. The potatoes are removed through an opening in the front of the drum.

When you are ready to use the potato peeler, start the drum revolving by turning the switch, turn on the water, then dump the potatoes in. Don't overload the machine. Remove the potatoes as soon as they are ready. This shouldn't take more than 2 to 3 minutes. If the potatoes have deep "eyes" or large dents it will be necessary to use a small knife on them after they have been removed from the peeler.

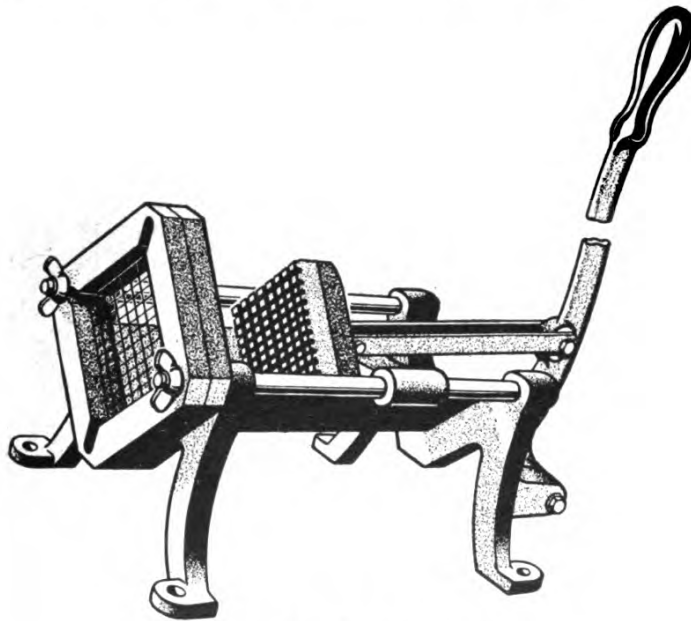


Figure 37.—Potato dicer.

Clean the peeler by taking it apart and scrubbing it with hot water. Do not use soap or other cleaning agents. Make sure the belt that revolves the drum is kept dry so it won't slip.

POTATO DICER

The potato dicer (figure 37) is used for cutting vegetables into cubes, slices, and French-fry shapes.

By means of a hand-operated lever, the potatoes are pushed through a die having knives that cut the vegetables into parts $\frac{1}{2}$ inch thick and then dropped into another chamber where there is another die. By means of a connecting rod, the vegetables are forced through this die and cut into the desired shape. Different kinds of dies may be used to give different sized cuts.

The main problem in operating is to see that the knives are properly set. Keep the knives absolutely clean and dry. Clean the machine after every use and oil it daily.

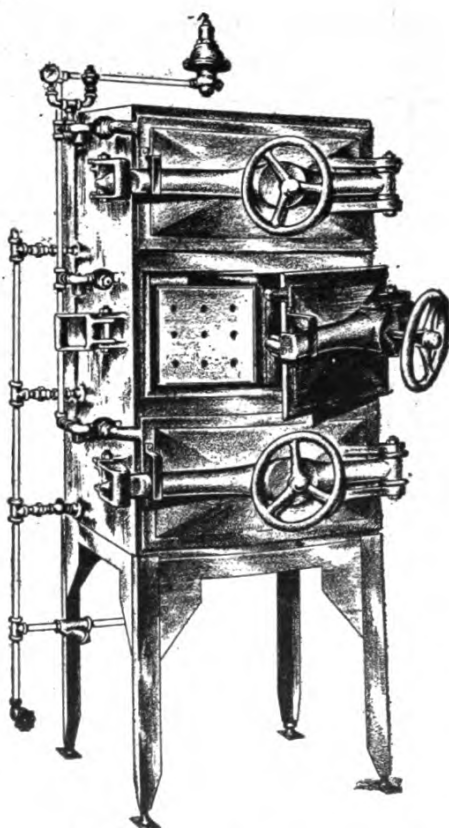


Figure 38.—Steamer.

STEAMERS

Steamers are used for steaming potatoes and other vegetables. See figure 38. These steamers consist of a cast iron jacket into which steam can be forced. The vegetables are placed in a galvanized bucket

and placed inside the jacket. AFTER closing the doors and opening the exhaust valve, open the steam valve. The amount of steam pressure is controlled by a pressure-reducing valve.

Steamers need daily cleaning. The best way to clean them is to flush them out thoroughly with hot water.

THE MEAT BLOCK

The meat block (figure 39) should be cleaned after each use with a scraper and a wire brush. When you're cutting liver or cleaning chicken, scrape it

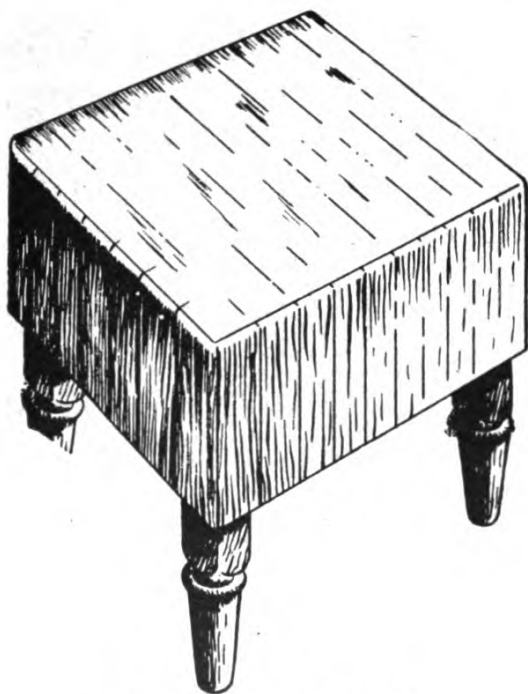


Figure 39.—Meat block.

down even oftener than that. The block will be much easier to clean if blood and moisture are not given a chance to soak deeply into the wood.

The beveled edges of the cutting surface prevent splitting at the edges of the block. Use the scraper on these edges every time you clean the block in order to maintain the bevel.

Keep the cutting surface of the block dry by observing these **FOUR DONT'S**—Don't wash the cutting surface of the block. Don't wash meat tools on the block. Don't allow fresh moist meat to remain on the block any longer than necessary. Don't thaw frozen meat on the block.

If the meat block is in good shape from having been cleaned regularly with the scraper and a brush, you shouldn't need to use salt for cleaning it. Turn the block around each week so the surface will wear down evenly. Use the entire cutting surface as much as possible.

CARVING KNIVES

The use of carving knives is one of the first things you should learn. Watch an experienced cook or butcher carve meat. Notice how he cuts in such a way that there is no danger of cutting himself—always moving the knife in such a manner that it will not cut him if it slips. See how particular he is about keeping the knife blade sharp—you'll see him use the steel frequently. Observe how he uses the steel. That wrist action is as good as you will see on any good curve-ball pitcher. Notice that the meat is always cut across the grain in order to break down the long fibers in the meat.

ELECTRIC MEAT GRINDING MACHINE

Meat grinding machines are used for preparing hamburger, minced beef, hash, and chili.

The machine is made of cast iron. See figure 40. The worm *A* fits into the cylinder *B*. This worm forces the meat through the cutting knife which is attached to the end of the cylinder after the worm has been inserted.

The meat is fed into the hopper only after the motor has been started.

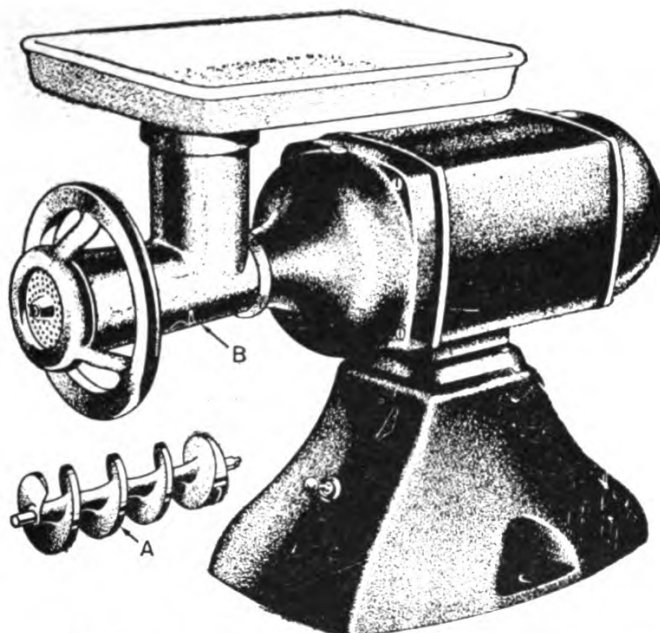


Figure 40.—Electric meat grinding machine.

Force the meat into the machine by means of a wooden plunger—NOT WITH YOUR HANDS.

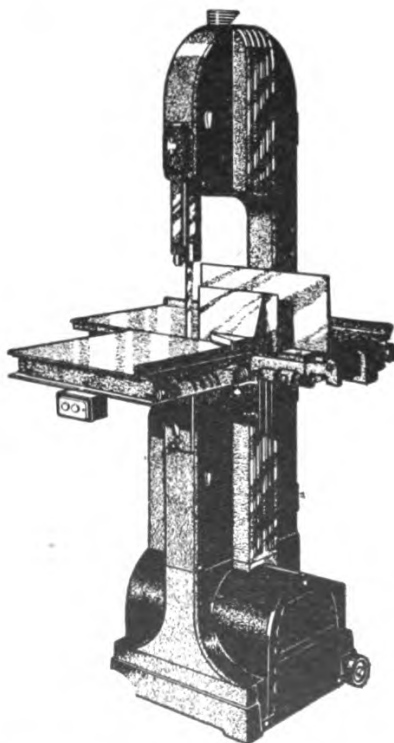


Figure 41.—Electric meat saw.

When finished, take the grinder apart and clean each part thoroughly with soap and hot water. Use a stiff brush. Keep the machine in a dry, cool place.

ELECTRIC MEAT SAW

Electric meat saws (figure 41) are used mainly for cutting lamb chops, pork loins, pork chops, veal chops, and ham.

The saw is made to revolve by a mechanical arrangement of two wheels and an electric motor. The table on which the meat is laid is constructed so that you can cut the meat to any desired size. The saw blades themselves are $\frac{5}{8}$ inch wide and about 10 feet long.

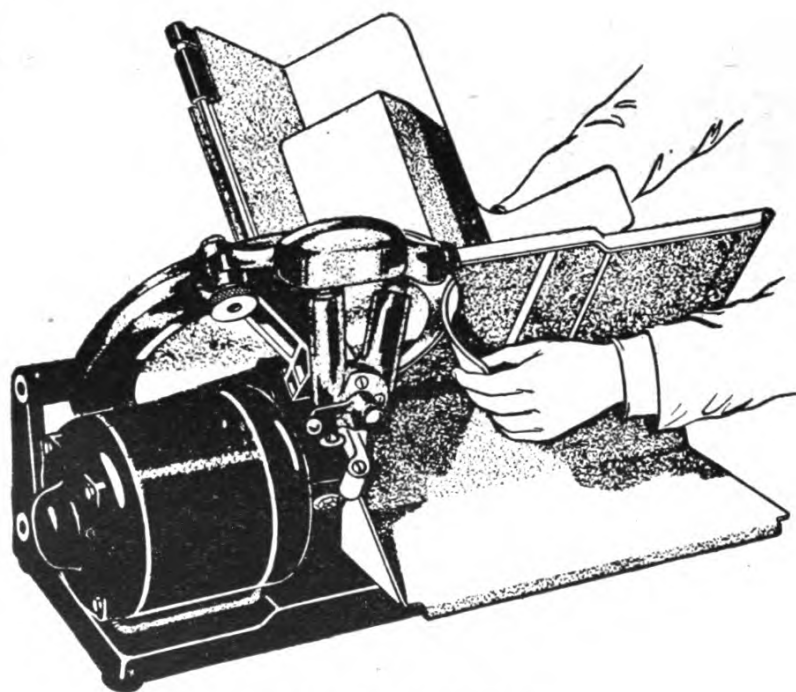


Figure 42.—Meat slicer.

Before operating, tighten the blade—using only one hand. Put only enough tension on it to keep it from slipping. Feed the meat through straight, giving the blade a chance to cut. Use only sharp blades. Dull blades heat up, twist, and break.

The revolving wheels have grease chambers. Pack them frequently. Keep the machine clean. Oil it at least once a week.

MEAT SLICER

The meat slicer (figure 42) is used for slicing roasts, bacon, luncheon meat, various kinds of sausages, and ham.

The machine has a carriage on which the meat is placed. A swiftly revolving disk knife slices the meat as the carriage is moved across the face of the revolving knife. Here's how to use the slicer—

Place the meat on the carriage and adjust the clamp to hold the meat firmly. This clamp also furnishes protection for your hand. Next, set the dial for the desired thickness of the slices. Then turn on the switch to make the disk knife revolve. Move the carriage back and forth with the hand lever. **WARNING**—keep your hands away from the revolving knife.

Clean the machine with hot water and a stiff brush. Don't let any water get into the motor. Dry thoroughly with a cloth after cleaning. Oil the shaft and other parts that require oil.

When the disk knife needs sharpening, adjust the emery wheels that are attached to the machine. Then turn on the switch so the blade will revolve against the wheels. Clean the knife thoroughly after sharpening to remove the particles of emery that stick to the knife.

CUBE STEAK MACHINE

The cube steak machine is used to make all sorts of tough meats tender. The machine is about 20 inches long and about one foot wide.

To operate, lay the steak on the perforated plate and push the hand lever. This lever causes 32 disk-wheel knives to cut across the steak. The perforated

plate then makes a one-quarter turn (90°). Push the lever again to make cuts crossing the first cuts. The steak is then ready for frying or broiling.

Take the machine apart and clean after each using. Oil the parts often.



CHAPTER 9

CUTTING MEAT THE NAVY WAY

EVERY BIT USED

Most of the beef taken aboard ship is frozen. The bones have been taken out and the meat cut into pieces. The frozen meat is delivered in boxes weighing from 44 to 55 pounds. Each box is marked so you will know which meat you can use for steaks or roasts, for stewing, or as chopped meat.

But, what are you going to do when fresh or frozen **WHOLE** carcasses of lamb, **HALVES** of veal, or **QUARTERS** of beef are delivered? This happens occasionally aboard ship and frequently at shore stations.

The Navy way of meat cutting has been worked out to make the best use of all parts of the carcass—even the bones.

Beef is the most popular of all meats. Learn how to handle it first. Before you do any beef cutting though, study the beef chart on page 104 until you have an idea where the bones are located. The line *A-B* shows where the division into quarters is made.

BEEF CHART

LOCATION, STRUCTURE AND NAMES OF BONES

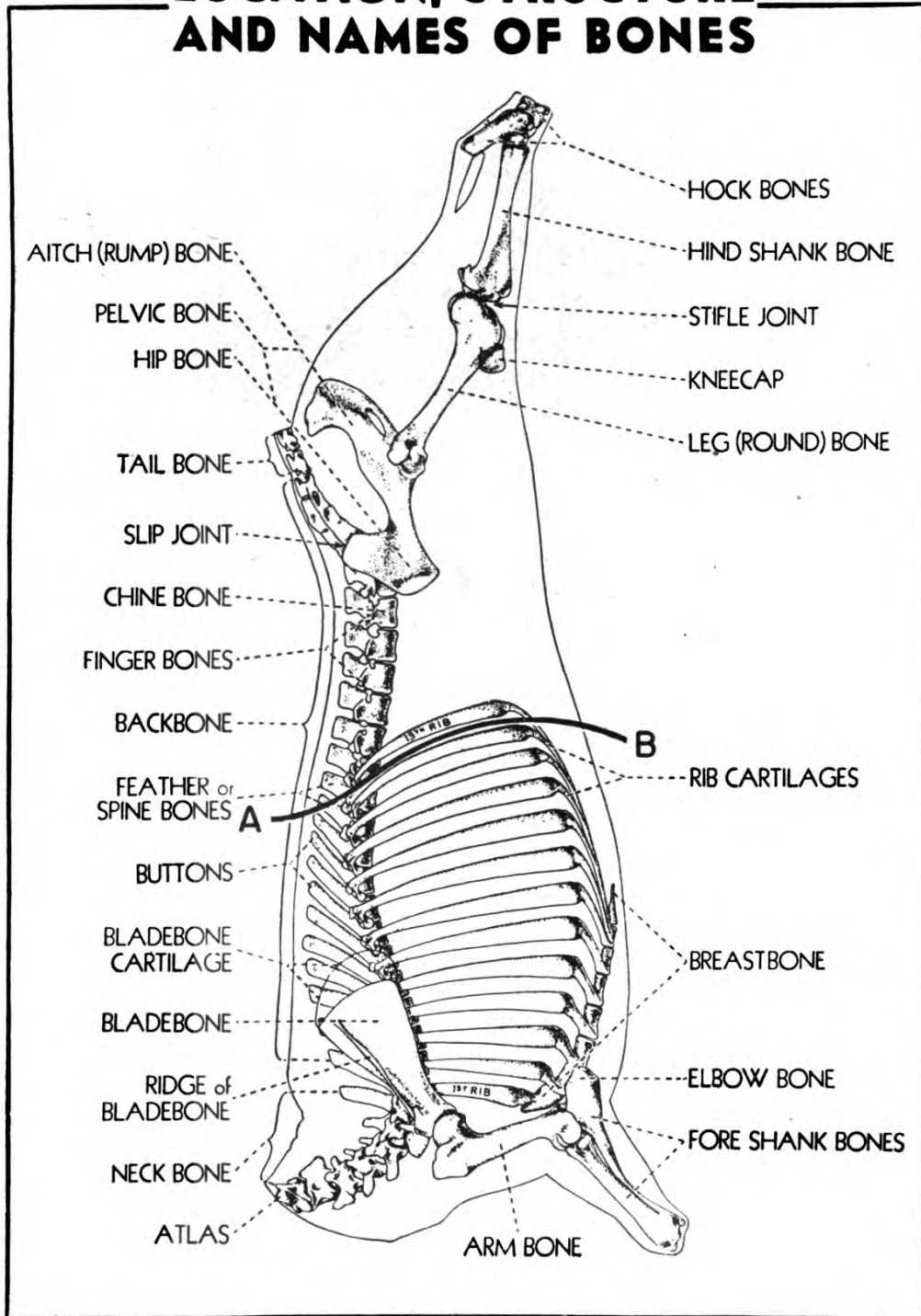


Figure 43.

MAKING BEEF HINDQUARTER CUTS

Figure 44 shows a hindquarter divided into various sections which you should be able to recognize and cut. Dotted lines indicate pieces that are cut from the opposite side of the quarter.

Numbers 4 through 9 are used for roasts and steaks. This takes in about 46 percent of the hind-

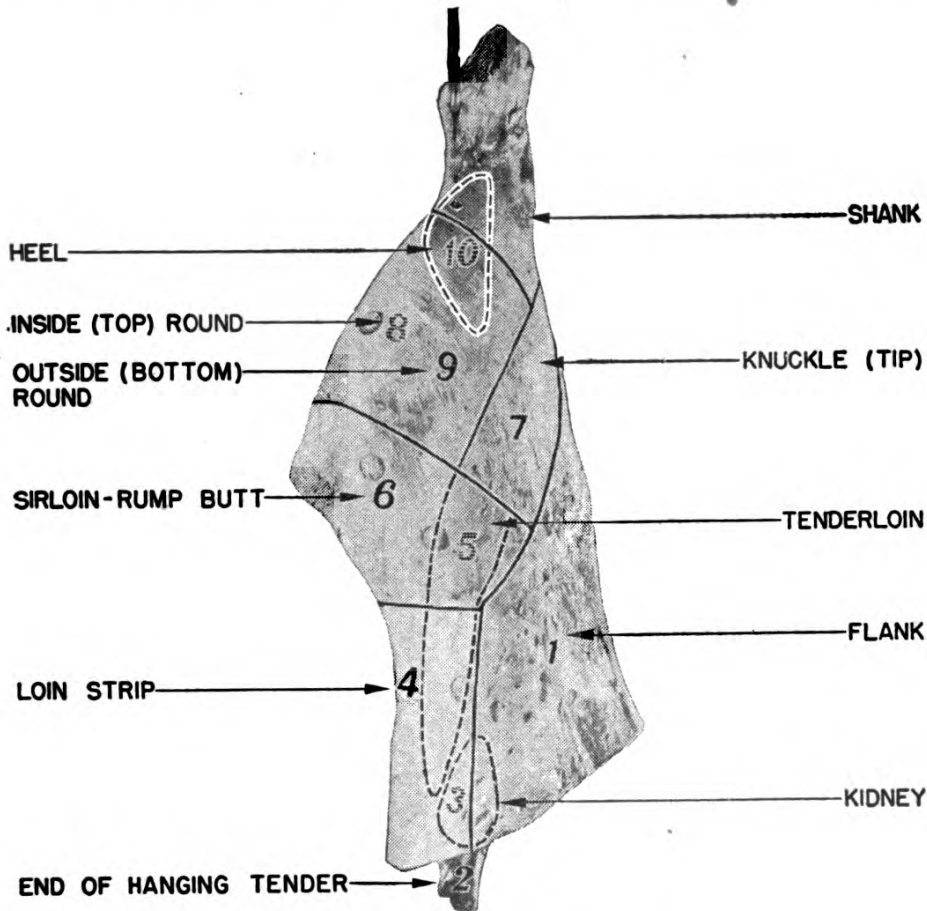


Figure 44.—Beef hindquarter.

quarter. Numbers 1, 2, 3, 10 and 11 (22 percent of the quarter) are used for braising, stewing or grinding. About 14 percent is made up of fat, used for covering lean meat and for cooking. Bones, 16 percent of the quarter, are used for making soup stock. Only 2 percent loss is allowed for cutting and trimming. Now for the cutting—

REMOVING THE FLANK

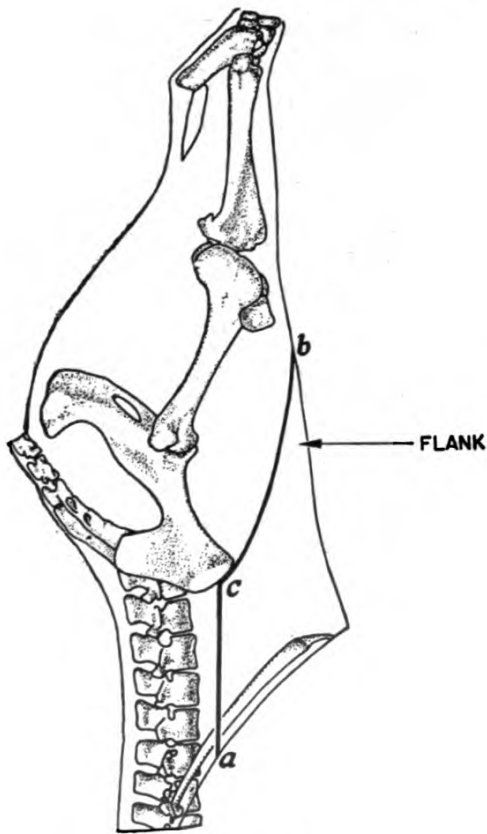


Figure 45.

How is this done? First of all, hang the quarter up as shown in figure 46. As indicated, saw through the 13th rib about 1 inch below the loin "eye" muscle. Next comes the knife.

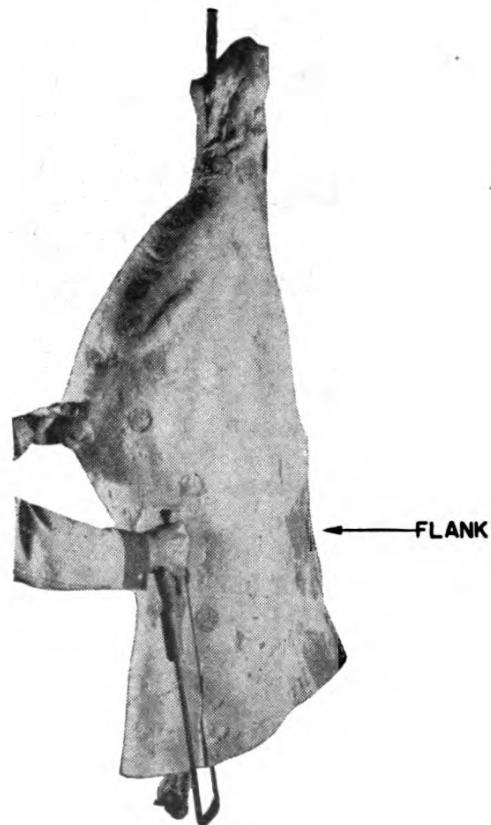


Figure 46.

Figure 47 shows how you cut straight up, parallel with the back, until the knife hits the hip bone.

Before making other cuts, remove the thin layer of meat from outside of flank (figure 48).

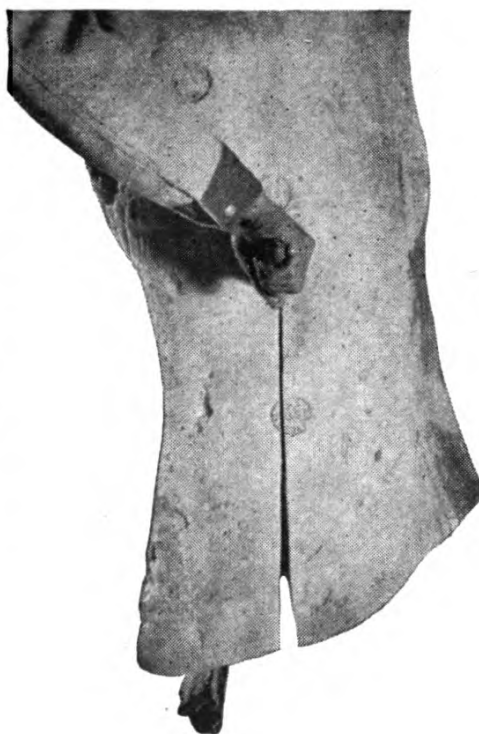


Figure 47.

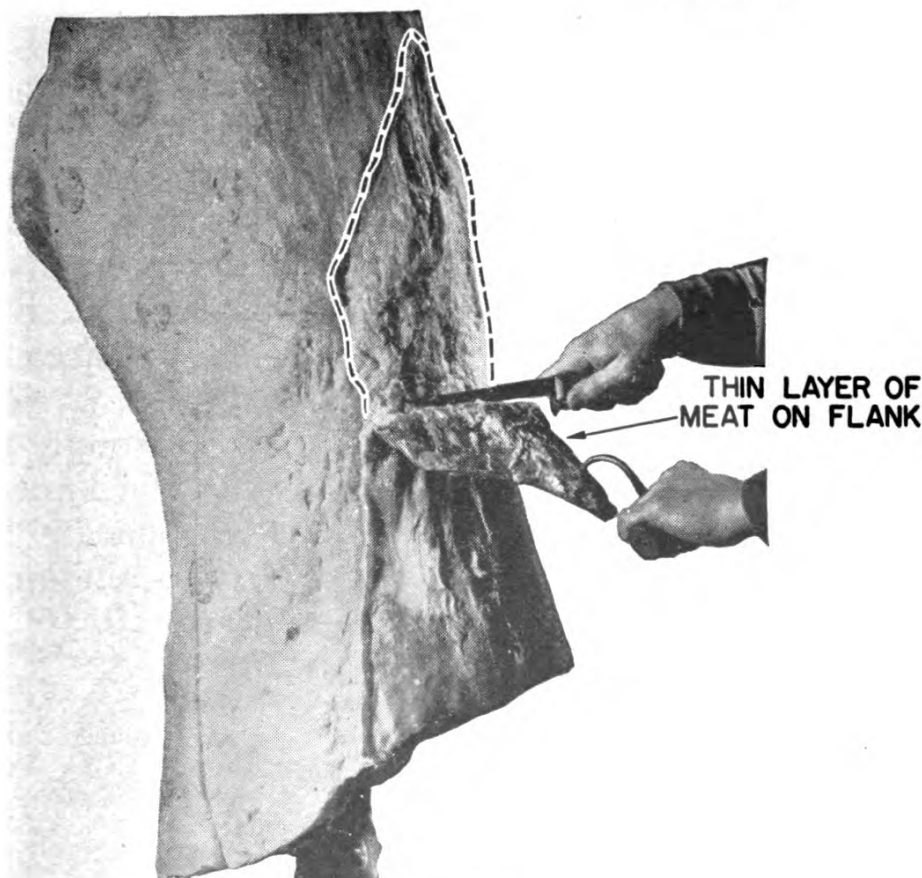


Figure 48.

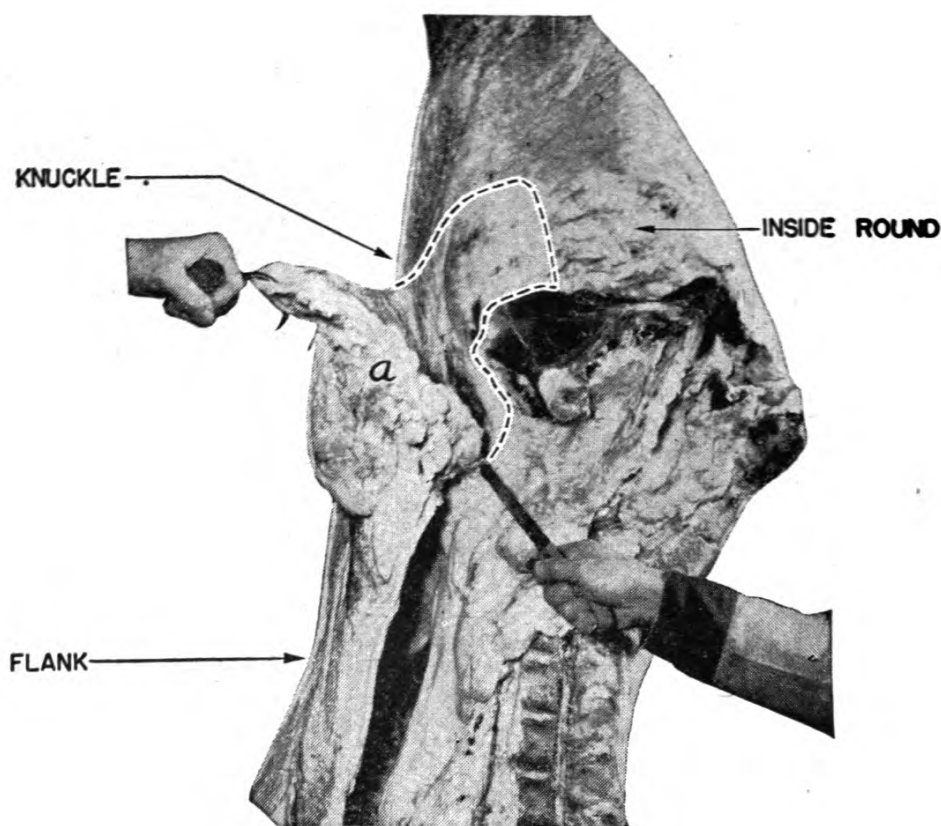


Figure 49.

Now, work on the other side of the quarter. Loosen the cod fat *a* shown in figure 49 by cutting through the seam over the inside round and knuckle. Broken line shows area to be cut. Flank is at left.

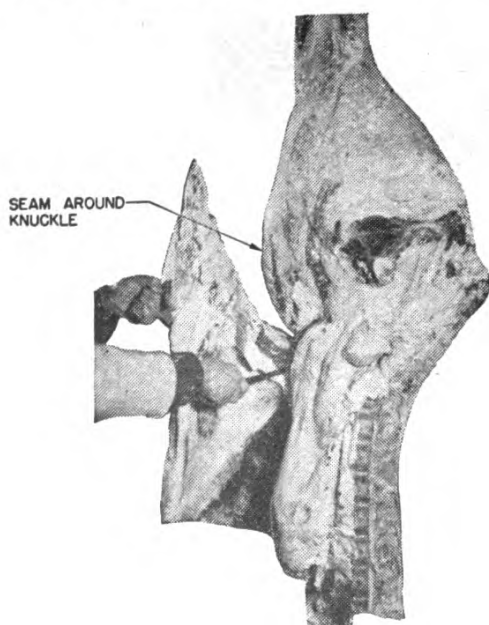


Figure 50.

Then cut through the seam around the knuckle to partially separate the flank from the hindquarter. See figure 50.

Finish separating the flank from the hindquarter as shown in figure 51.

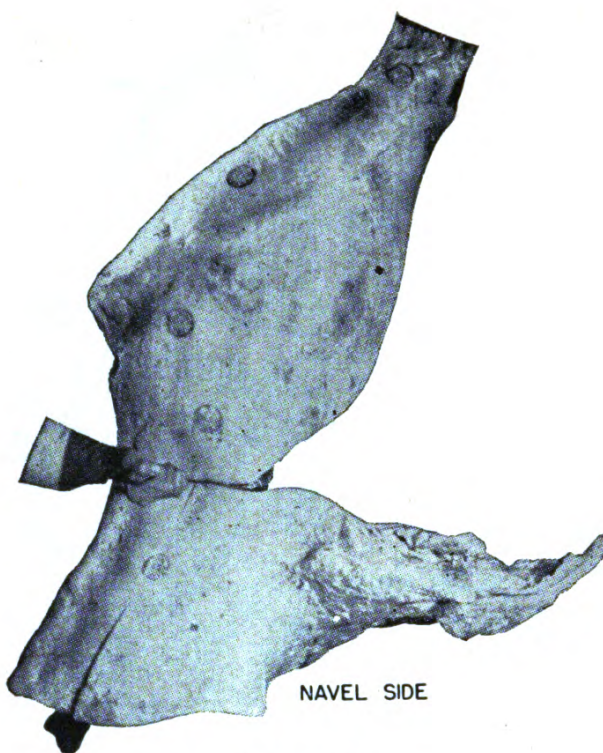


Figure 51.

CUTTING THE FLANK

Lay the flank down as you see it in figure 52. Cut the thin strip X from the navel side as shown.

Pull the membrane from the inside of the flank as pictured.



Figure 52.

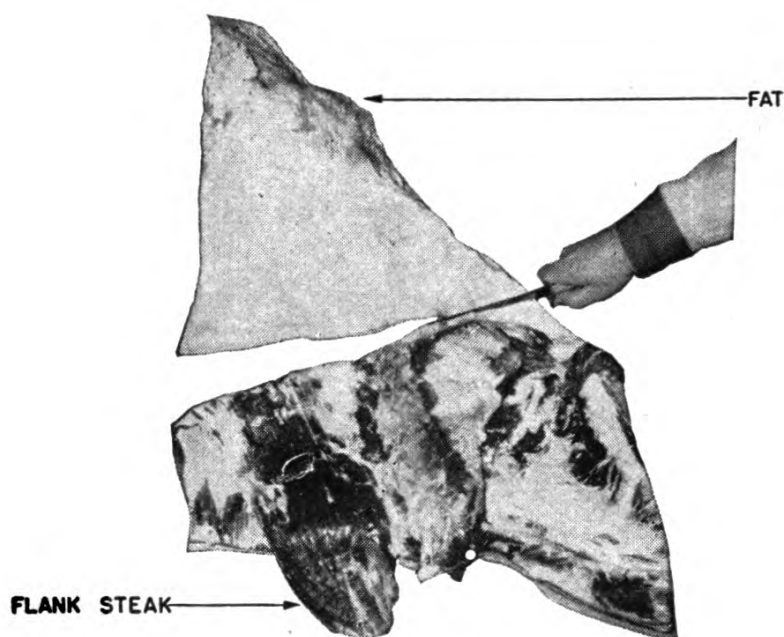


Figure 53.

Remove the piece of bone left in the flank when you sawed through the 13th rib. Lastly, separate the meat from the fat. Pull the flank steak—with meat attached—away from the fat as far as it will pull easily. Then make the cut seen in figure 53. Now the boneless flank is ready to be cut into pieces for stewing or grinding.

REMOVING THE HANGING TENDER

Your next job is to cut the hanging tender from the quarter. Now that the flank is removed, the hanging tender is revealed as in figure 54. Just before making this cut, remove the large blood vessel from along the edge of the chine bone as shown.

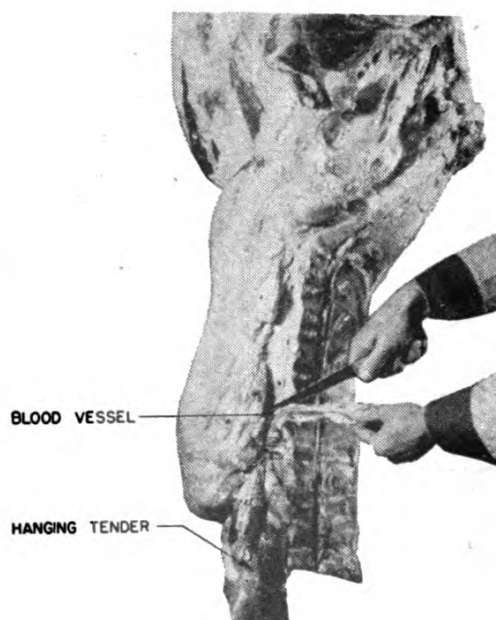


Figure 54.

Remove the membrane and surplus fat from the outside of the hanging tender. Split the tender and take out the strip of gristle.

This boneless hanging tender is then used for stewing or grinding.

REMOVING FAT FROM INSIDE OF HIND QUARTER

Before making any other cuts, remove the fat from the inside. Figure 55 shows the first step. Cut

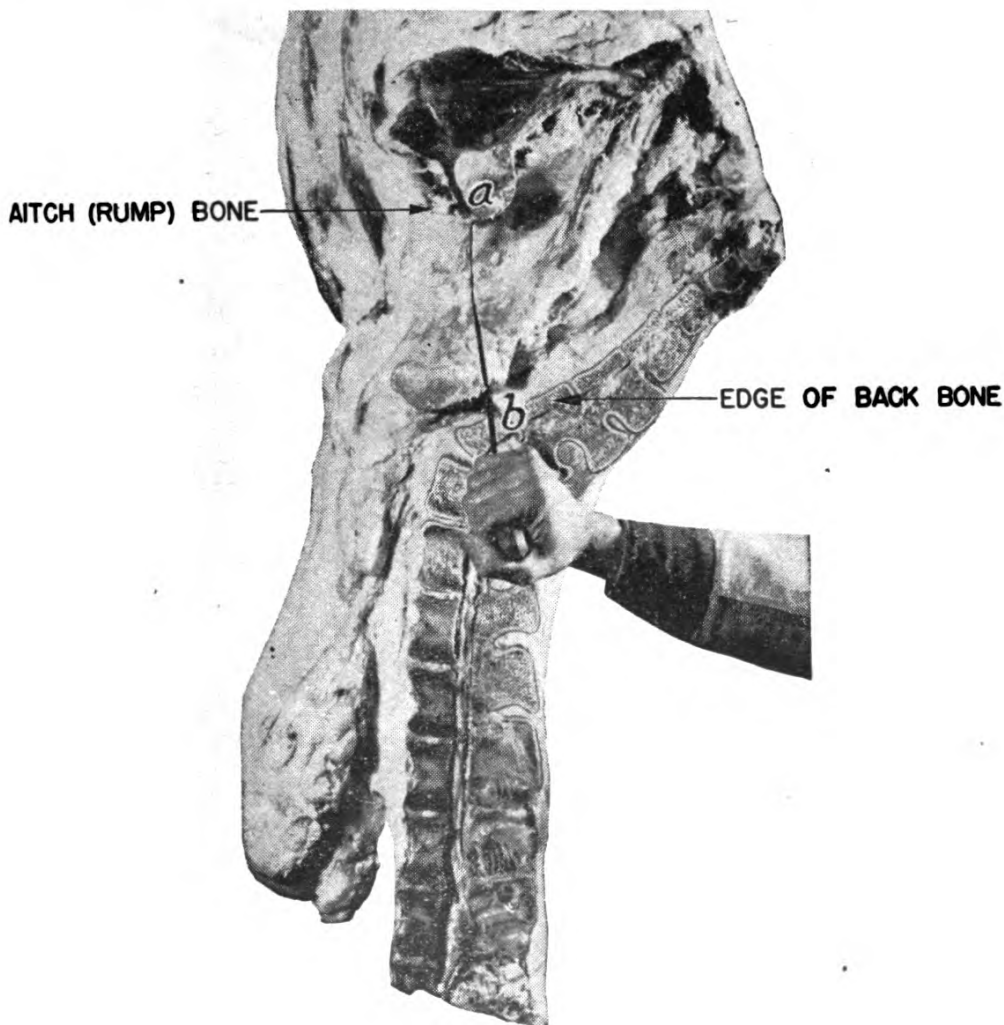


Figure 55.

through the fat from end of aitch (rump) bone *a* to the edge of the backbone *b*.

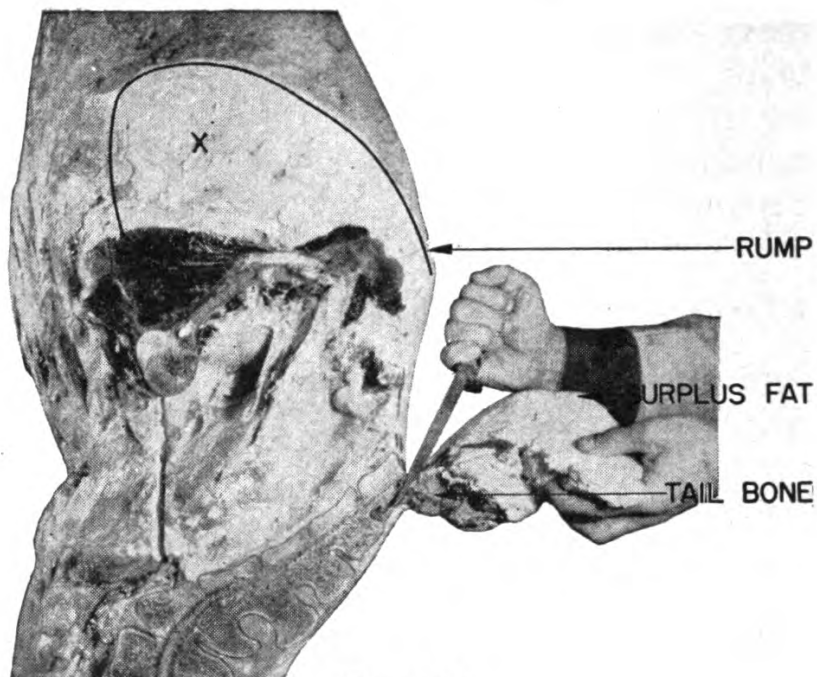


Figure 56.

Remove layer of fat (X of figure 56) leaving about $\frac{1}{2}$ inch on the meat. Cut the surplus fat from rump as shown. While doing this, unjoint and remove the tailbone (usually two tail vertebrae). Scoop the fat from inside the rump cavity (figure 57).

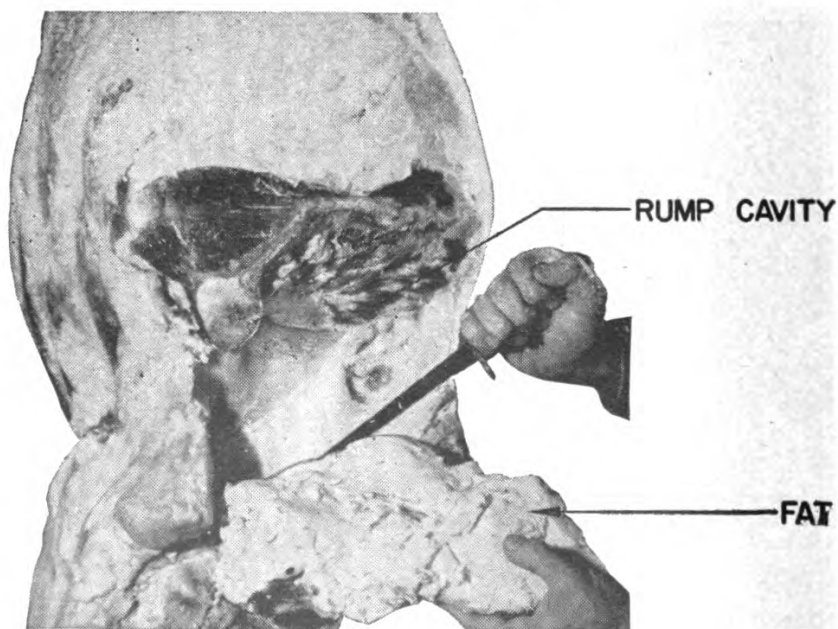


Figure 57.

Follow the seam to remove loin fat and the kidney knob as shown in figure 58.

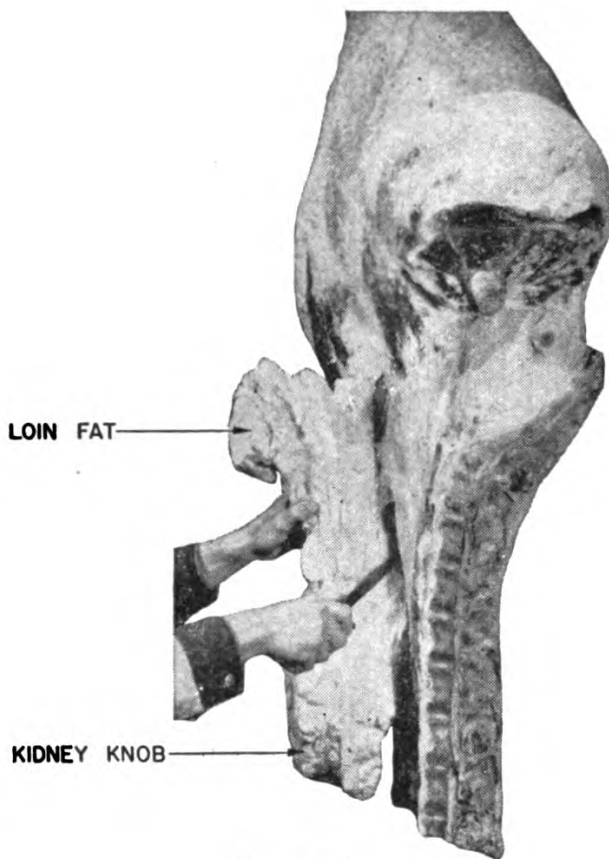


Figure 58.

Split open the kidney knob and take out the kidney (figure 59). Use the kidney with other meats in stews and ground meat dishes.

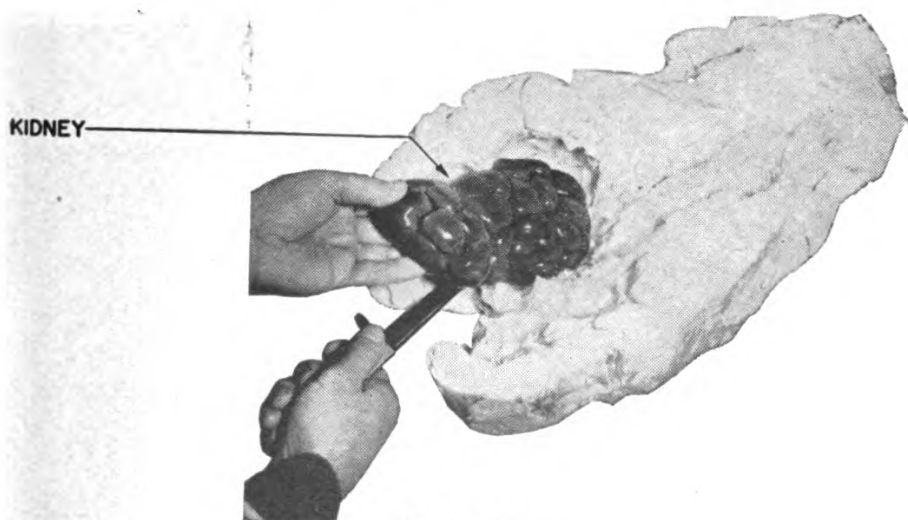


Figure 59.

REMOVING SHORT LOIN

Figure 60 shows how to remove the short loin. The butt end of the tenderloin (1) must be loosened

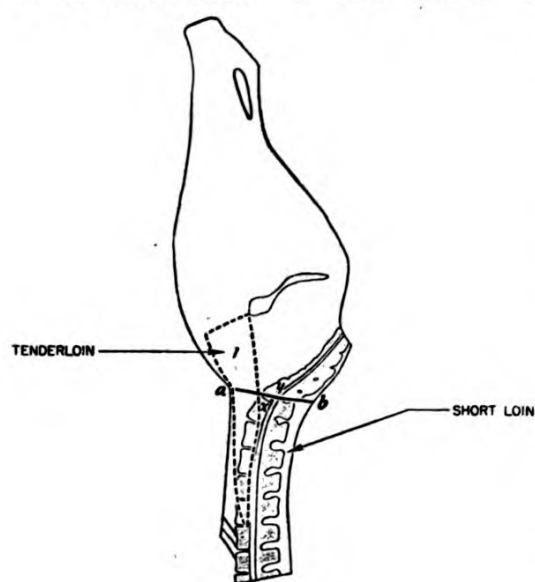


Figure 60.

and the short loin removed by making a cut between vertebrae x and y and then by cutting through the meat immediately in front of the hip bone from a to b . You don't need a saw for this.

First, scoop the layer of lean meat from the aitch (rump) bone shown in $\times$ of figure 61. Use a boning knife.

Then cut on a line with the exposed aitch bone to separate the head of the tenderloin a from knuckle b .

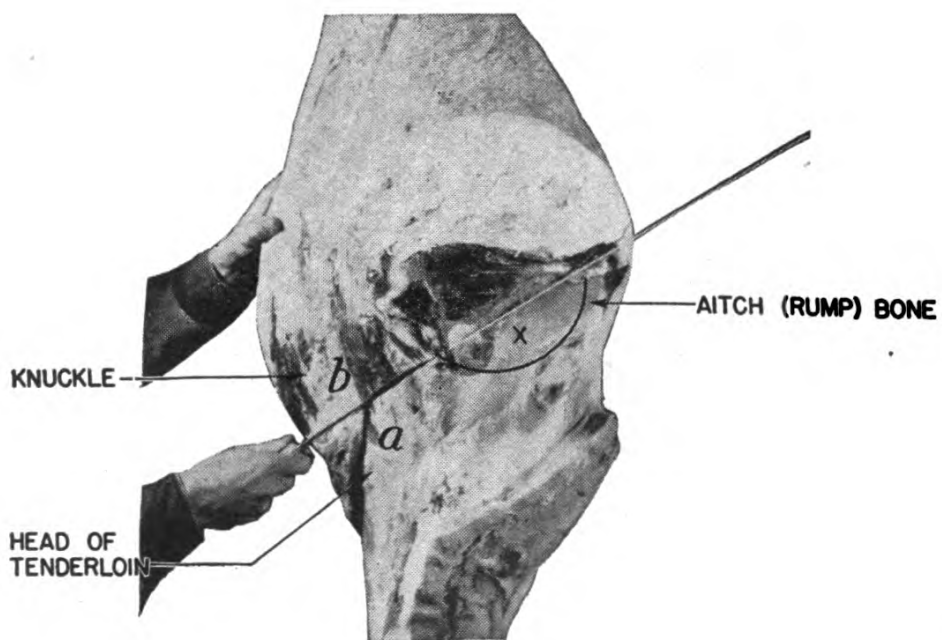


Figure 61.

Look at figure 62. Follow the seam over the hip bone to loosen the butt end of the tenderloin.

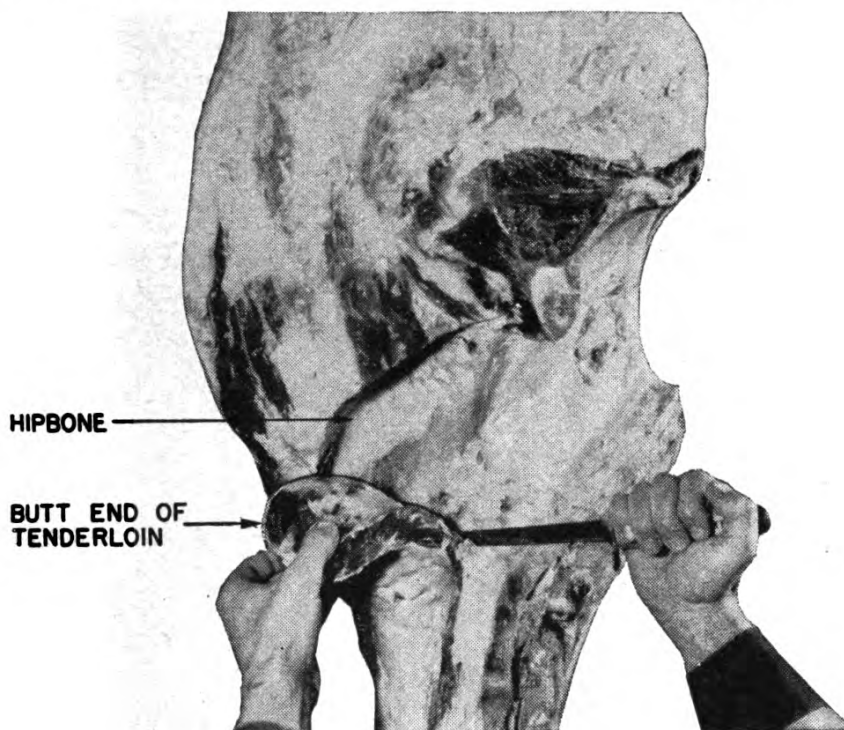


Figure 62.

Continue cutting under the tenderloin (figure 63) until the end of the hip bone is reached.

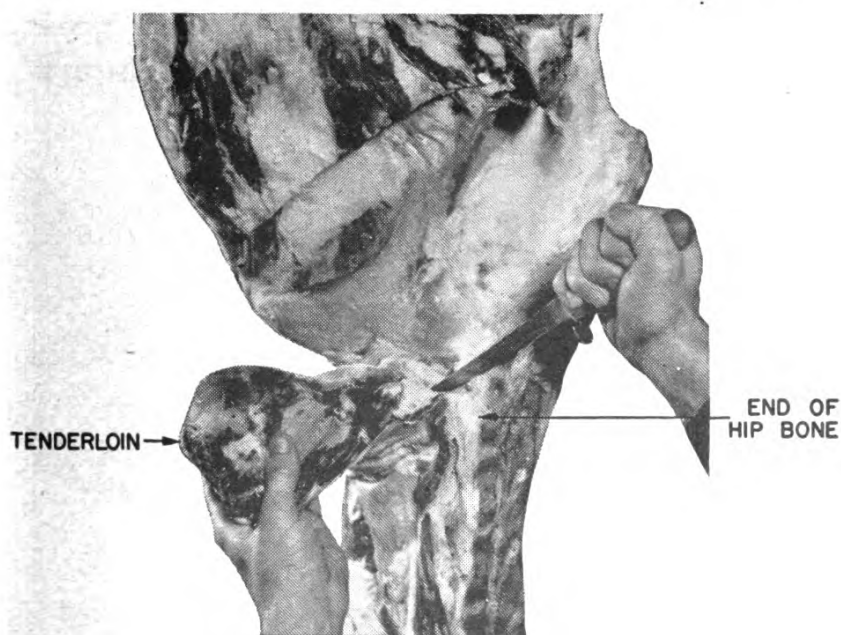


Figure 63.

Next, cut through the meat between the hip bone *a* and the last finger bone *b* (figure 64). Twist the

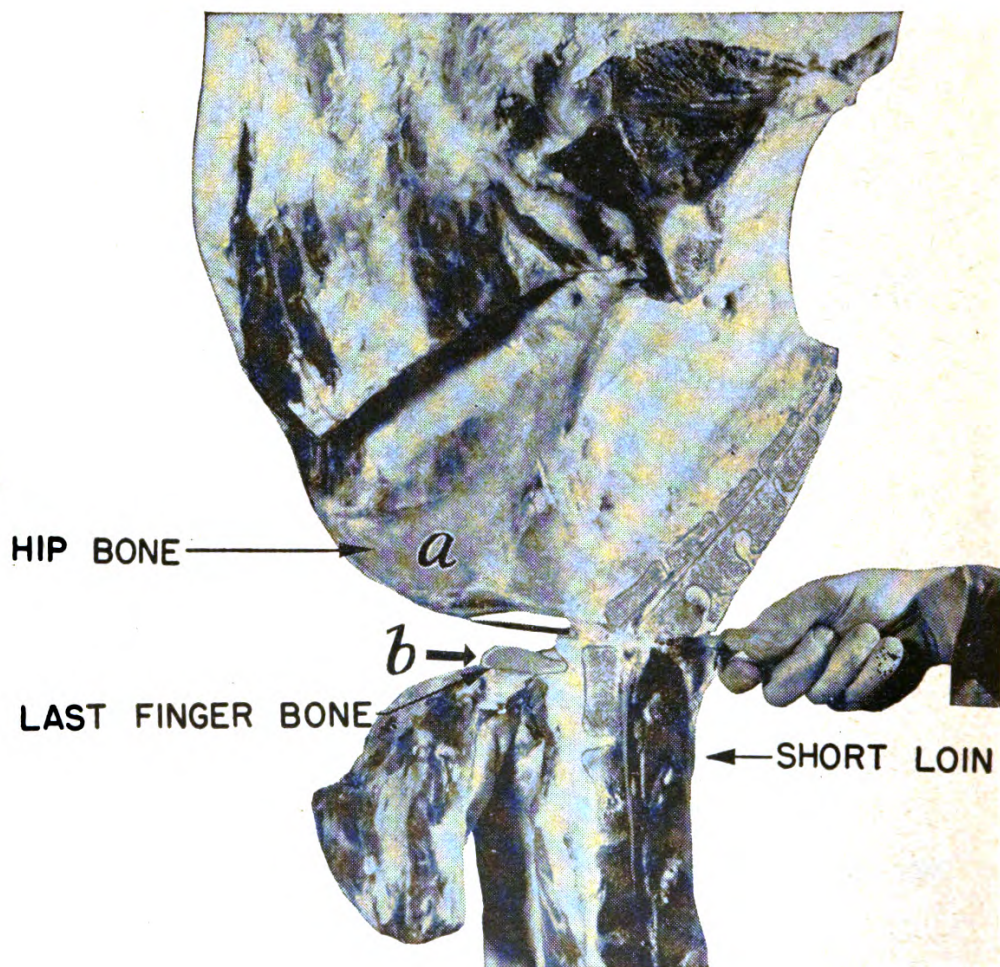


Figure 64.

short loin with your hands to free it from the rest of the quarter.

REMOVING AND TRIMMING THE TENDERLOIN



Figure 65.

Cut under the tenderloin to separate it from the short loin (figure 65). Remove the tough membrane from the outside of the tenderloin (figure 66).

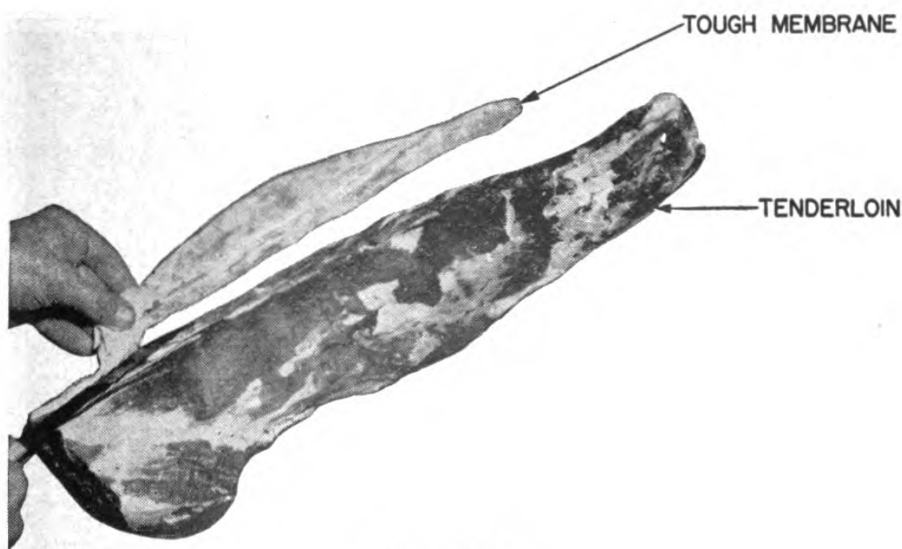


Figure 66.

The tenderloin is used for roasts or steaks.

THE LOIN STRIP

With the tenderloin removed, separate the loin strip from the backbone (figure 67).

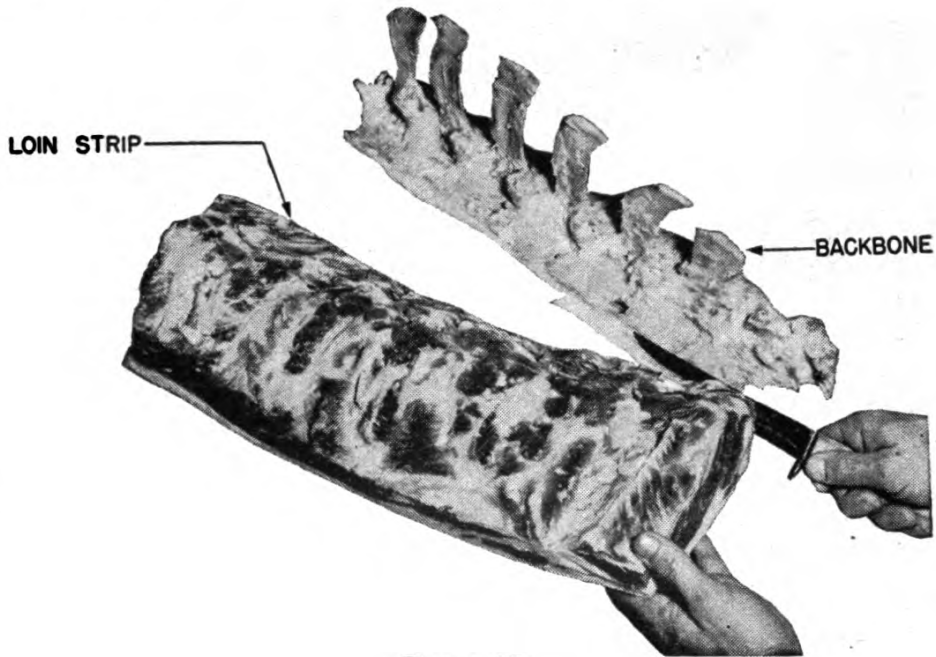


Figure 67.

Figure 68 shows the topside of the loin strip.

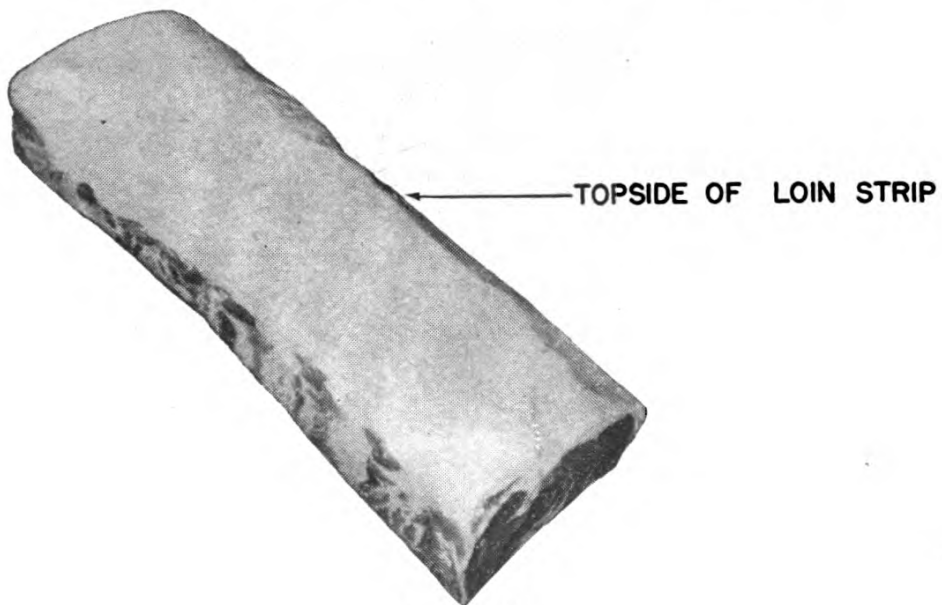


Figure 68.

This piece of meat is excellent for roasts or steaks.

REMOVING SIRLOIN-RUMP BUTT

The line *a* to *b* in figure 69 indicates where the cut is to be made in order to remove the sirloin-rump butt.

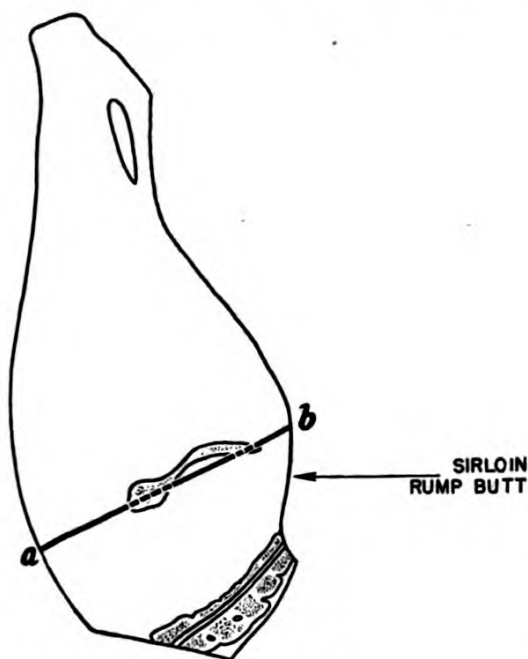


Figure 69.

Before this cut can be made, the rump and hip bone must be removed. Notice carefully how this is done. Loosen the meat from around the end of the hip bone as shown in figure 70.

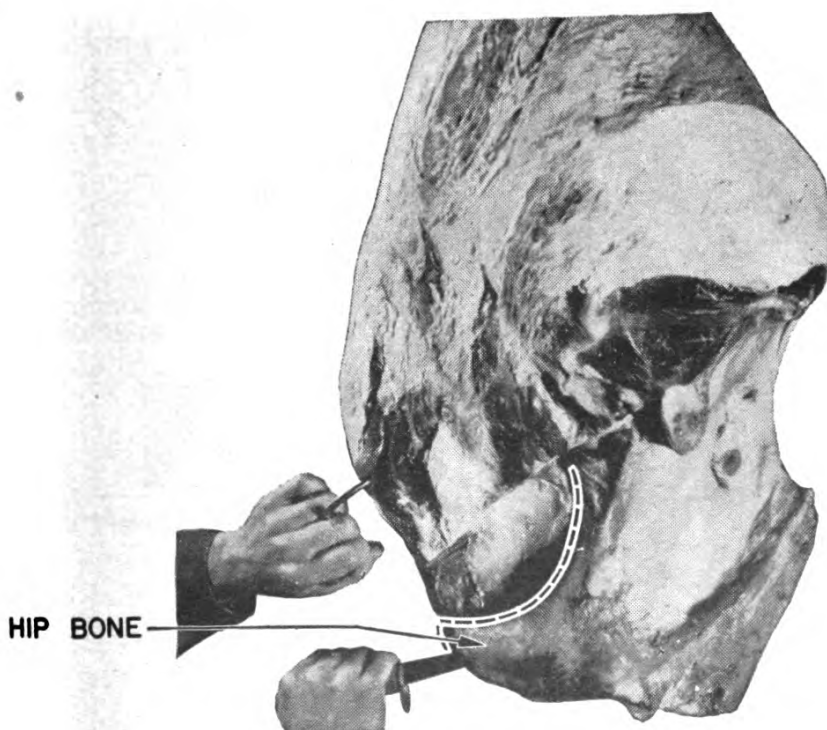


Figure 70.

Cut the meat free from the aitch (rump) bone (figure 71).

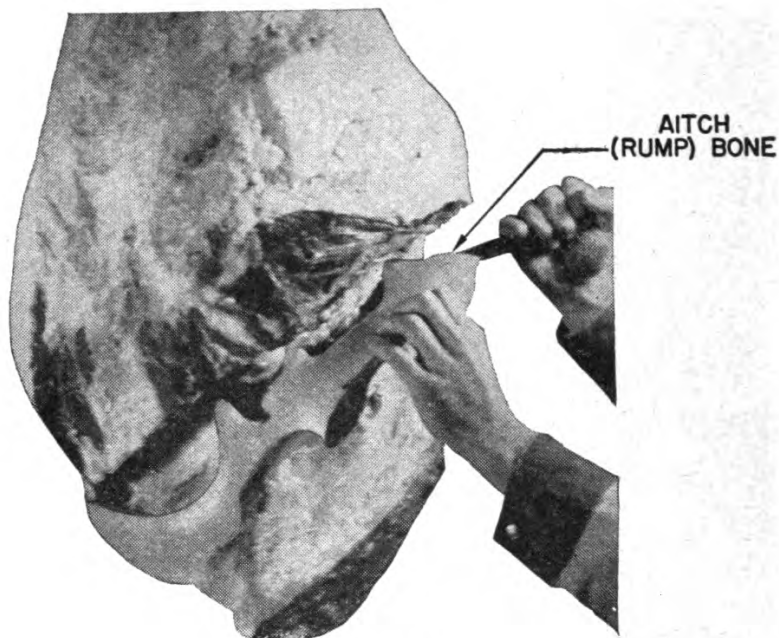


Figure 71.

Remove the bone by pulling it with one hand and cutting the meat free with the other (figure 72).



Figure 72.

Cut through both sides of the meat to the leg bone. Then cut around the ball end of the leg bone to separate the sirloin-rump butt from the round (figure 73).

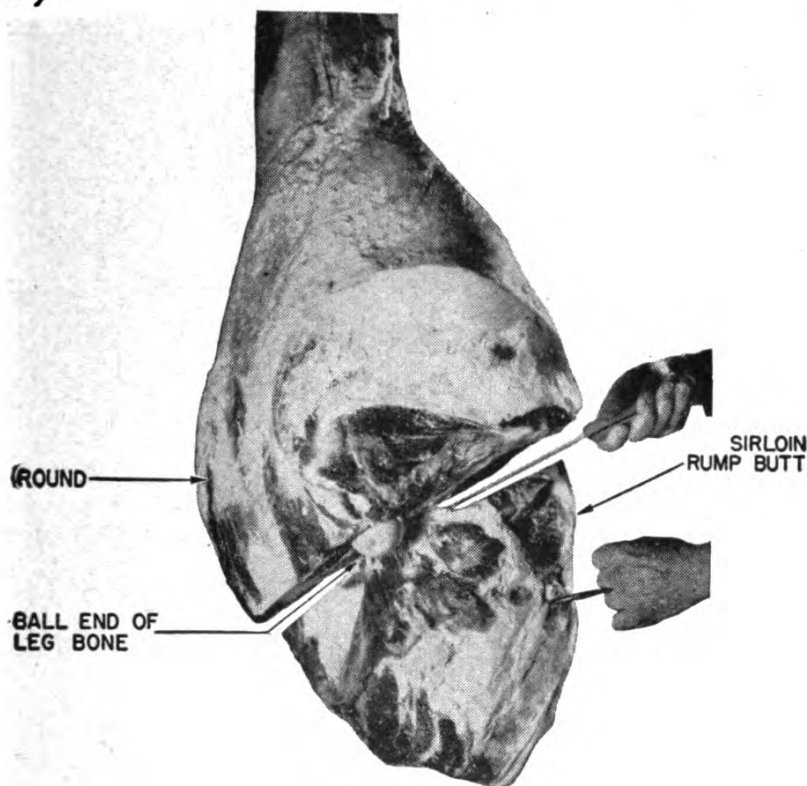


Figure 73.

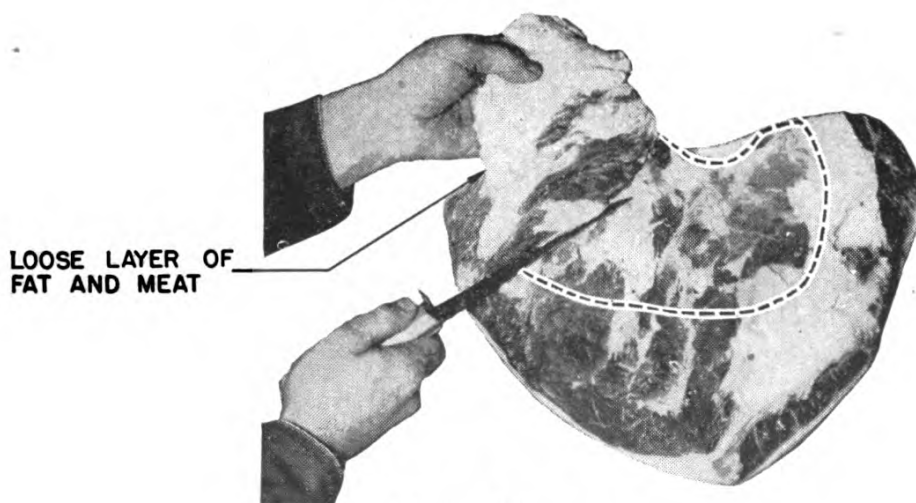


Figure 74.

Trim the sirloin-rump butt you have removed by cutting away the loose layer of meat and fat outlined by the dotted line in figure 74.

Split the sirloin-rump butt into two pieces by making the cut illustrated in figure 75. Cut the thin meat *a* from the sirloin section.

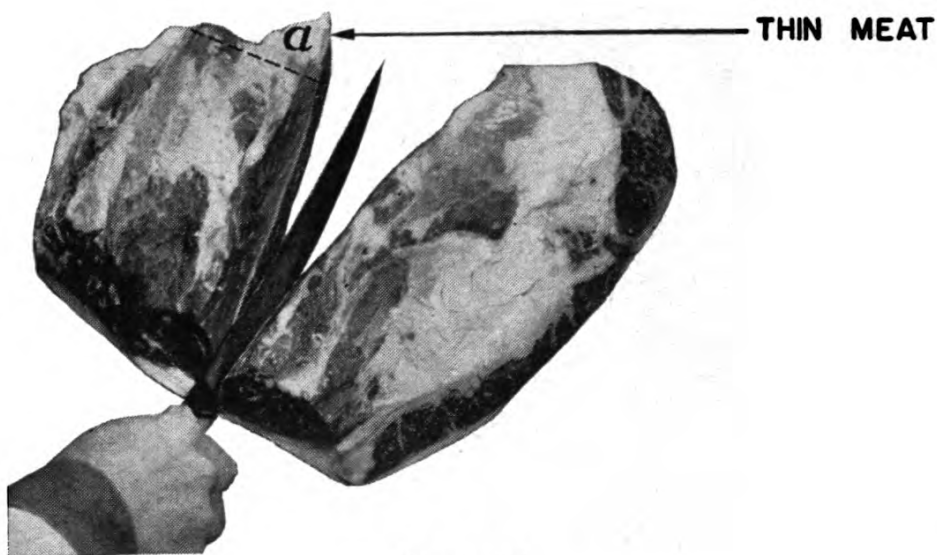


Figure 75.

The sirloin-rump butt is used for roasts or steaks.

MAKING CUTS FROM BEEF ROUND

Examine figure 76 to see what is to be done. The knuckle *1* is to be removed by cutting through the meat to the leg bone from *a* to *b* ON BOTH SIDES of the round.

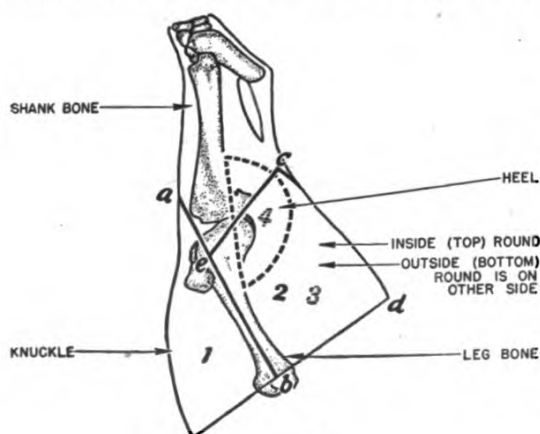


Figure 76.

The inside (top) round *2* will be removed by starting along the line *e — c* and following along the seam from *c* to *d* and *e* to *b*. The outside (bottom) round *3* will be taken off by

cutting through the seam and around the heel *4*. The heel *4* is removed by cutting around the shank and leg bones.

The face of the beef round shown in figure 77 also shows the location and names of the cuts to be

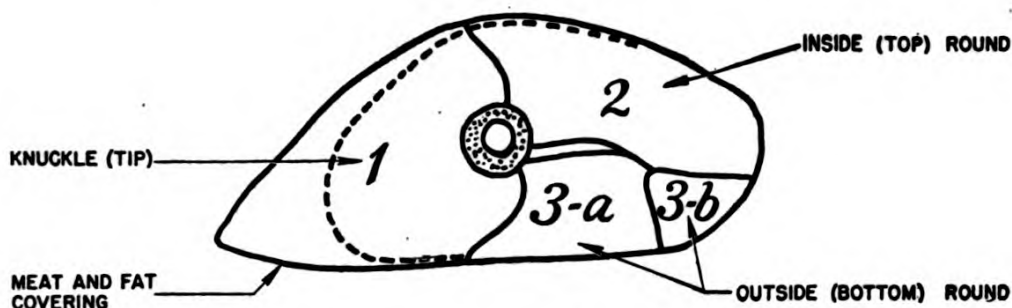


Figure 77.

removed. They are: knuckle (tip) 1, meat and fat covering, 1-a; inside (top) round 2; outside (bottom) round, 3-a and 3-b.

REMOVING THE KNUCKLE (TIP)

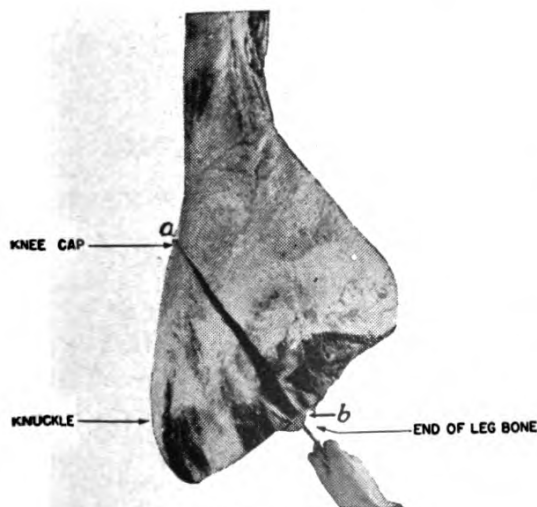


Figure 78.

On the inner face of the round, cut through the meat to the leg (round) bone from kneecap to end of bone as illustrated in figure 78.

Follow the seam to remove the meat and fat from outside of knuckle. (Figure 79).

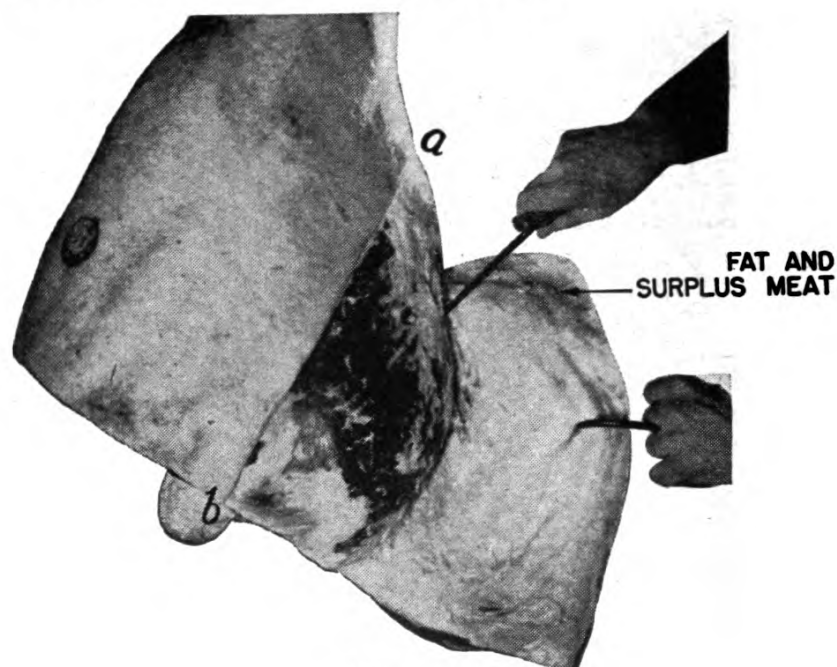


Figure 79.

Cut through the seam to leg (round) bone between *a* and *b* then unjoint the kneecap and cut through the membrane which covers the leg bone (figure 80).

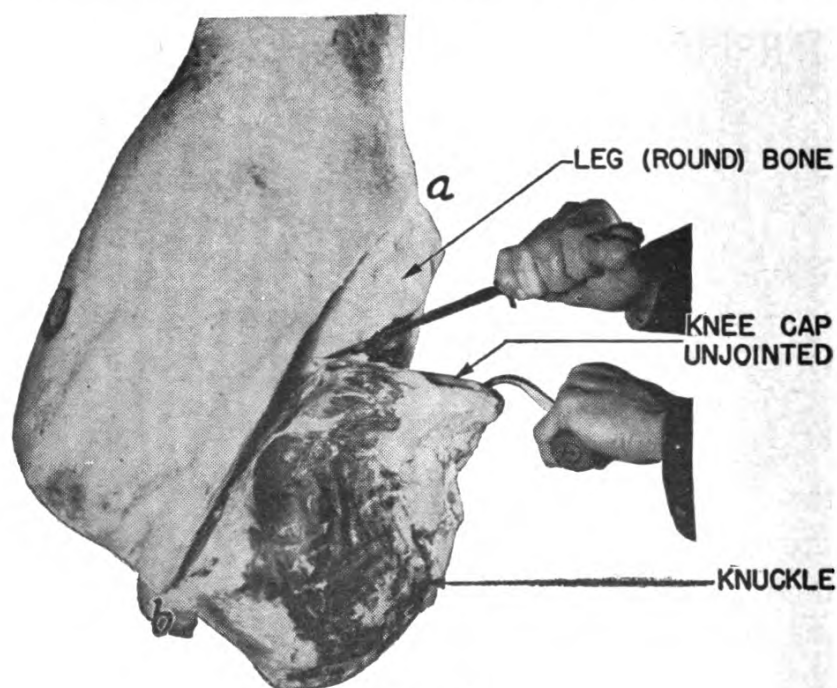


Figure 80.

Pull the knuckle (tip) from the leg (round) bone (figure 81).

Figure 82 shows how to trim the knuckle (tip). Cut the knee cap 1 from the knuckle 3; then follow the natural seam to remove the thin muscle 2.

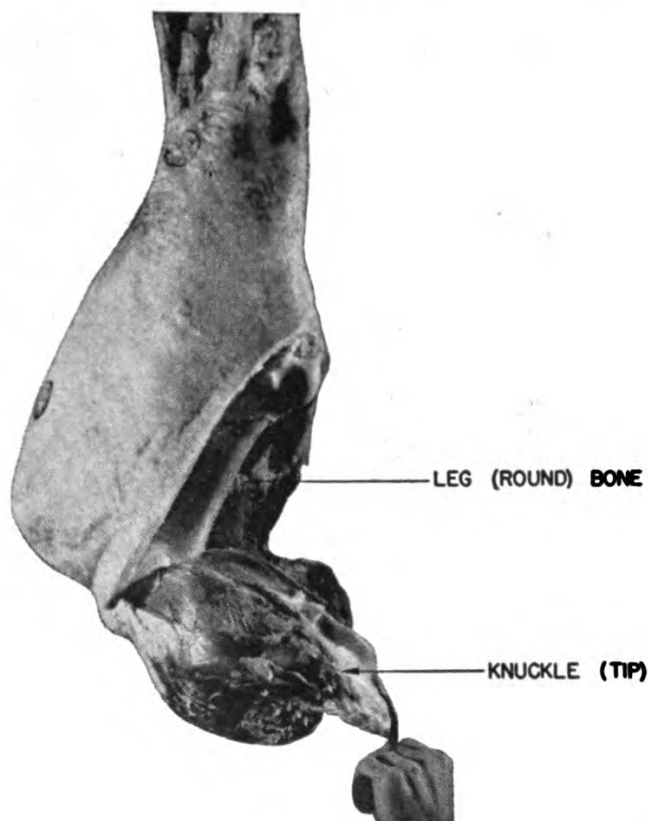


Figure 81.

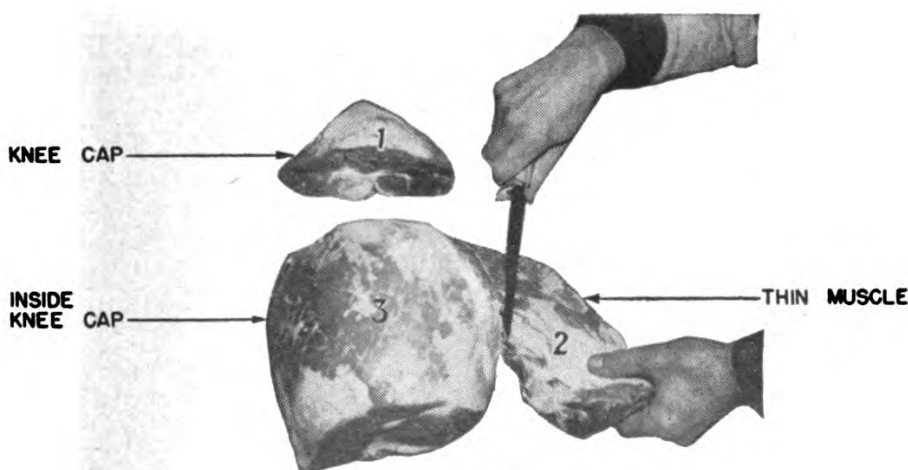


Figure 82.

The knuckle (tip) 3 is used for roasts and steaks.

REMOVING THE INSIDE (TOP) ROUND

After trimming the thin layer of dry meat and membrane from the inside (top) round, cut in a straight line with the tip of the knife from near the lower end of the gam cord *a* shown in figure 83 to the edge of "eye" muscle *b*.

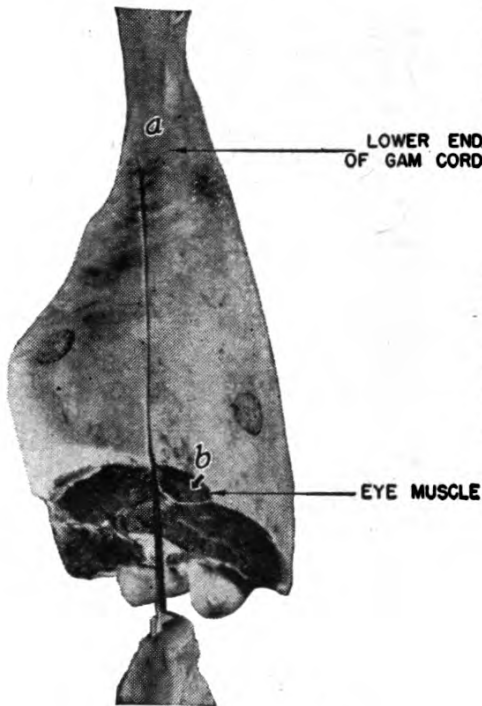


Figure 83

Then cut from the lower end of the gam cord *a* along the line *a-b* to the upper end of the leg (round) bone *b* as shown in figure 84. Use the tip of the knife for this.

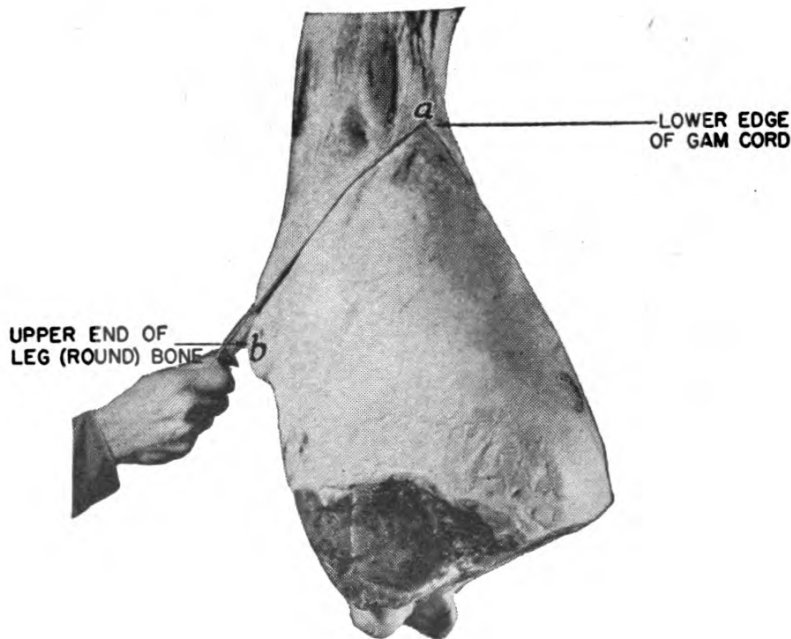


Figure 84.

Cut through the seam to separate the inside (bottom) round (figure 85).

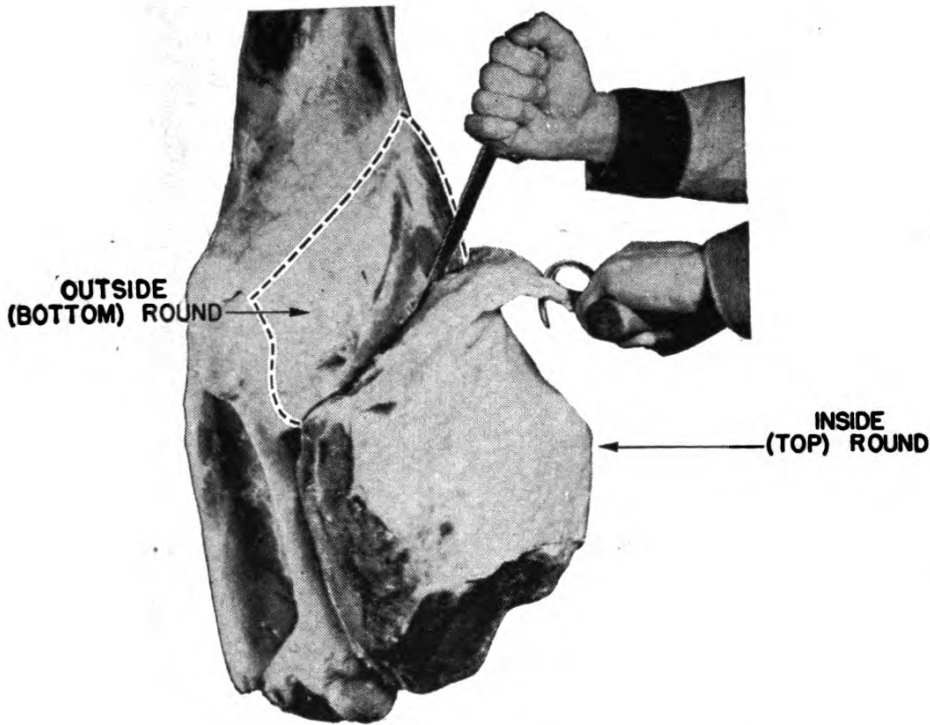


Figure 85.

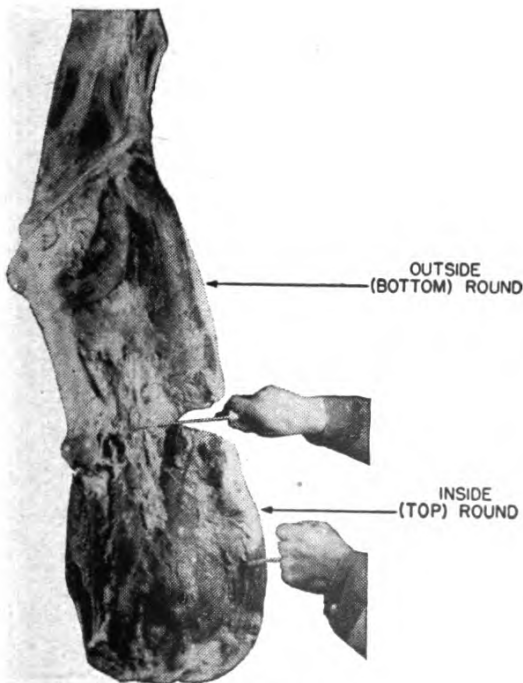


Figure 86.

Continue cutting through the seam to remove the inside (top) round (figure 86).

Cutting with the grain of the meat, split the inside (top) round into 2 or 3 pieces of equal size (figure 87). Trim the thin meat from the shank end of these pieces. Use for roasts and steaks.

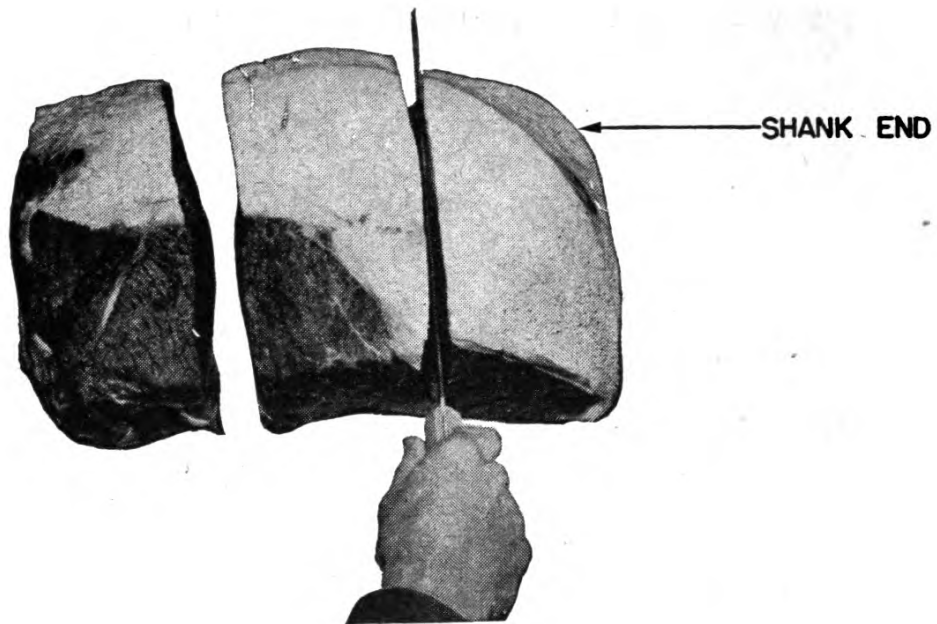


Figure 87.

REMOVING THE OUTSIDE (BOTTOM) ROUND

Cut through the end of the "eye" muscle to the first natural seam (figure 88).

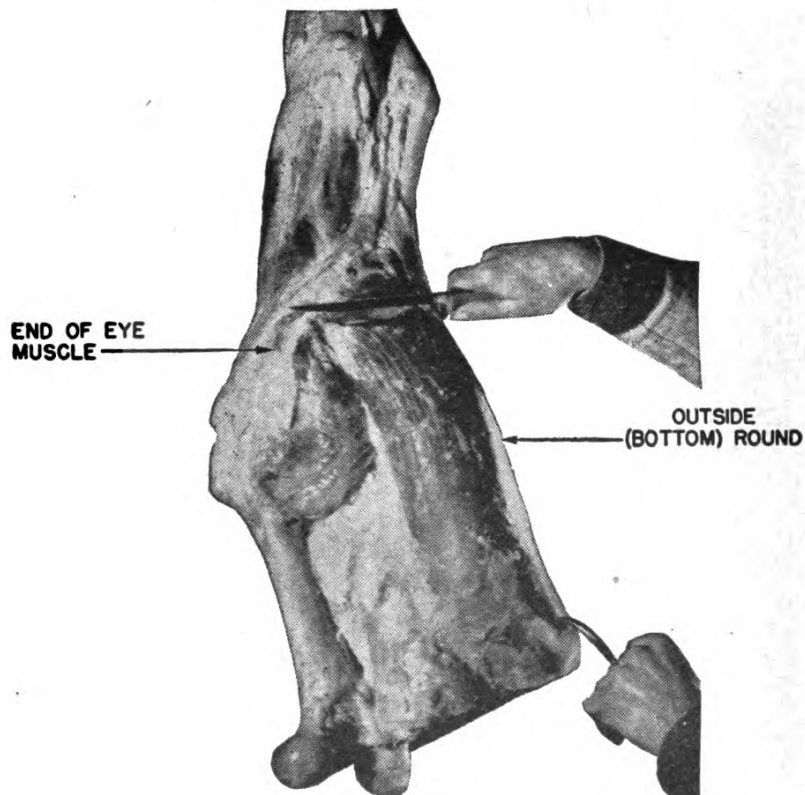


Figure 88.

Continue cutting with tip of knife (figure 89).

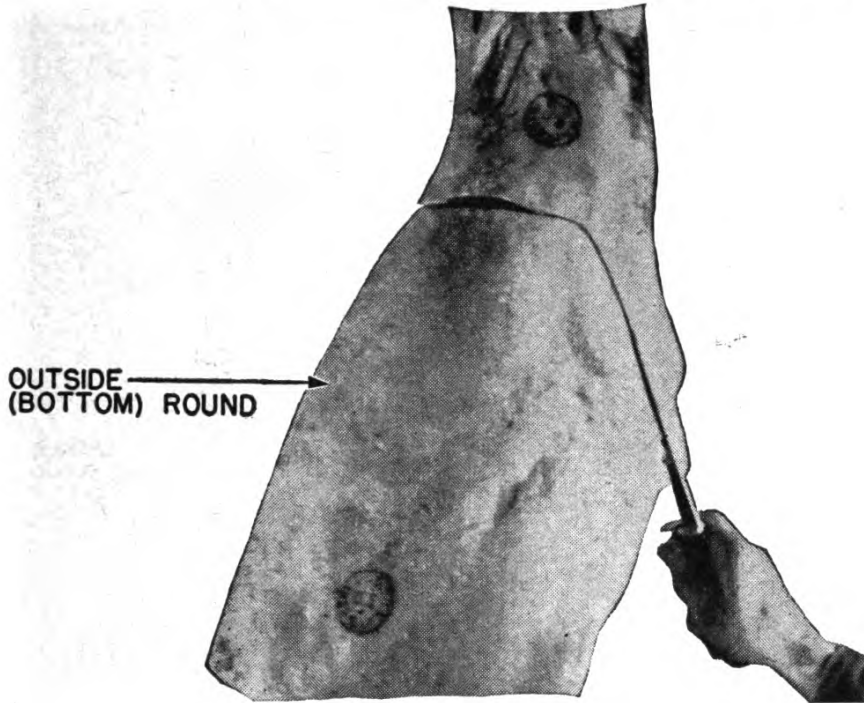


Figure 89.

Cut through the seam between the heel and the outside (bottom) round (figure 90).

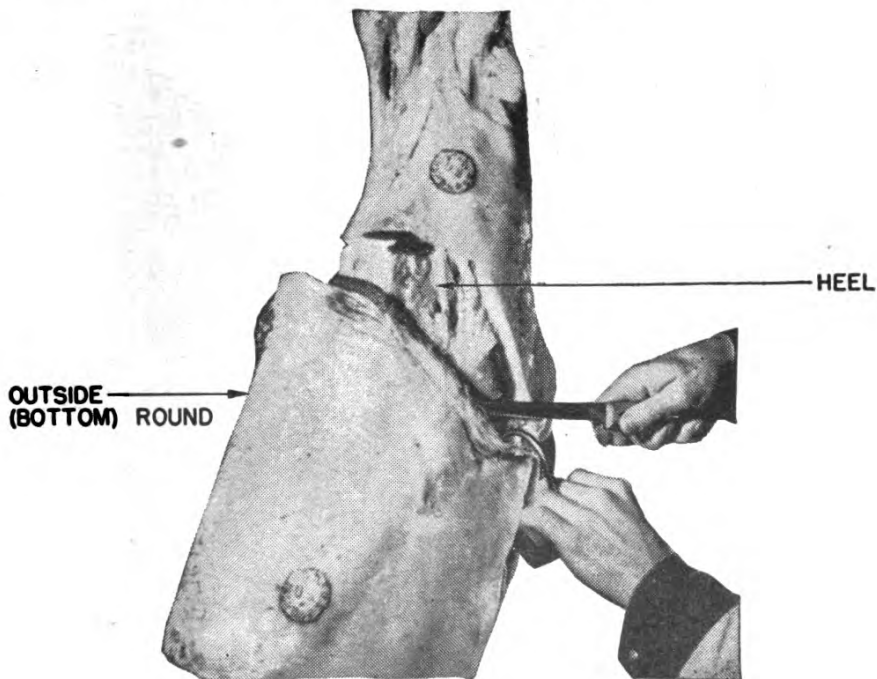


Figure 90.

Cut through the seam around the heel muscle.

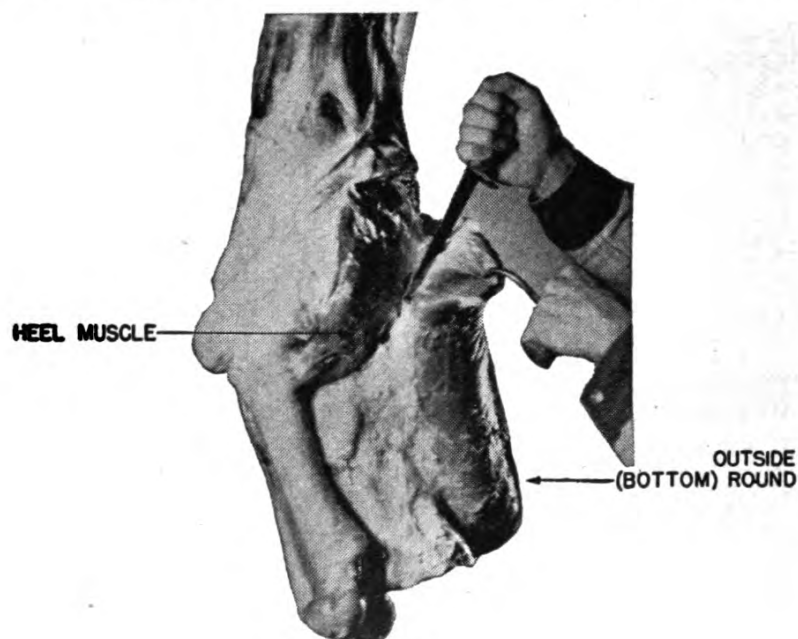


Figure 91.

Finish cutting through seam around heel: remove outside (bottom) round by freeing meat from leg (round) bone (figure 92). Trim surplus fat (section X).

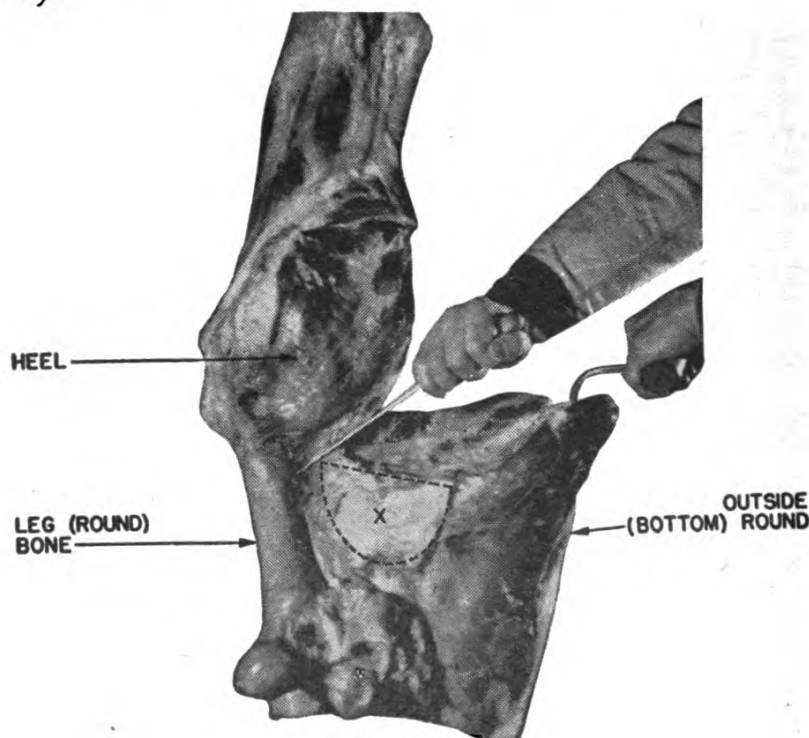


Figure 92.

As shown in figure 93, cut the tough membrane X from the edge of the outside (bottom) round. Divide outside (bottom) round into two pieces by cutting, with the grain of the meat, along line *a* to *b*.

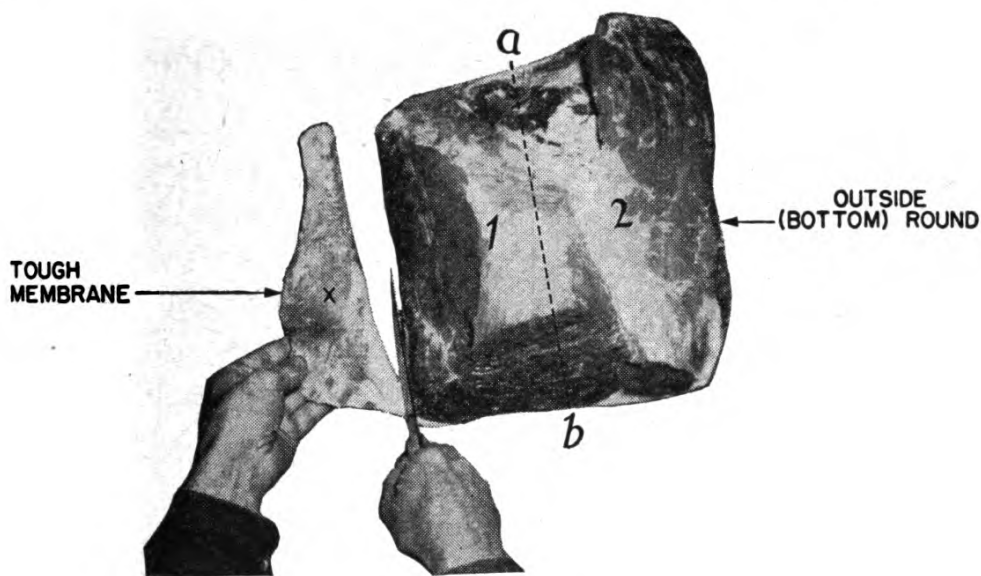


Figure 93.

Trim the thin meat from shank end of cuts #1 and #2 (figure 94). Cut #2 may be tied with 2 strings.

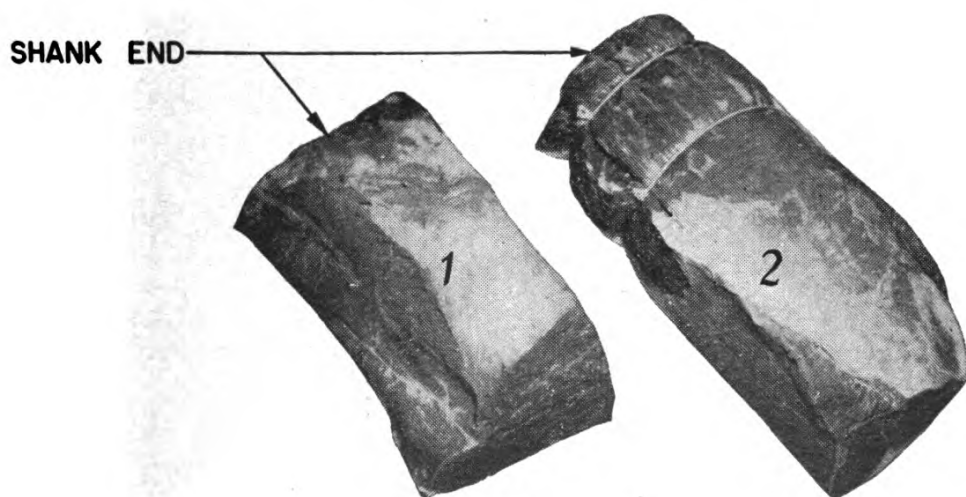


Figure 94.

These two cuts are used for braising as pot roasts or Swiss steaks. Use for roasting or as steaks for griddle broiling only when necessary.

REMOVING AND TRIMMING HEEL AND SHANK MEAT

Cut around the shank and leg bones to remove heel and shank meat (figure 95).

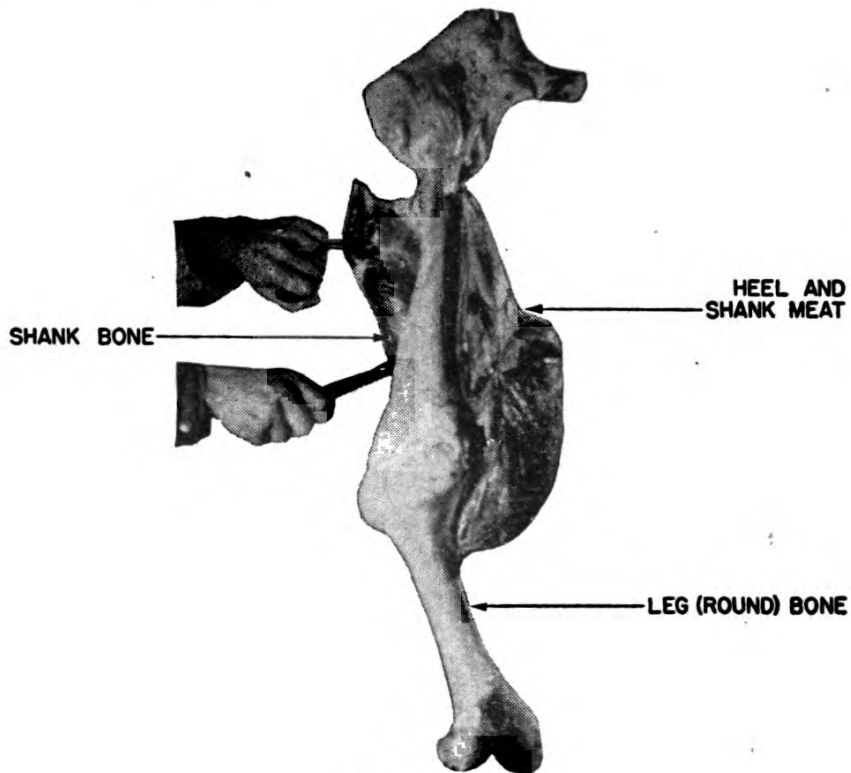


Figure 95.

Cut through the seam to separate the shank meat 1 from the heel meat 2 (figure 96). Trim the thin meat 3 from the end of the heel.

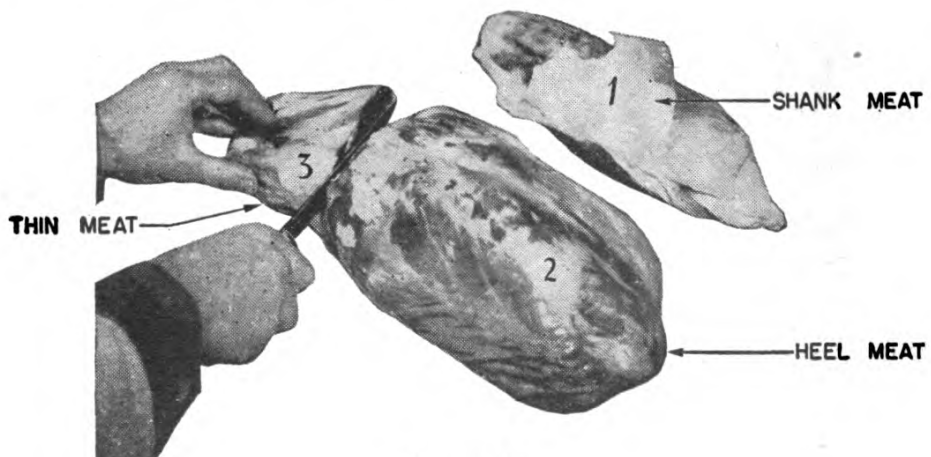


Figure 96.

The heel of the round 2 is used for braising as a pot-roast or for cutting into pieces for stewing or grinding.

USING MEAT TRIMMINGS, BONES, AND FAT

Cut the lean trimmings into pieces for stew, or grind, and use for meat loaf, beefburgers, salisbury steaks, or meat balls.

All fresh clean fat trimmed from beef quarters or cuts should be cut into strips, ground through a coarse plate, and rendered immediately for use in cooking.

Saw the bones into pieces and use for making stock for soups, gravies, or meat loaves.

MAKING BEEF FOREQUARTER CUTS

Now move up forward. Figure 97 shows the names

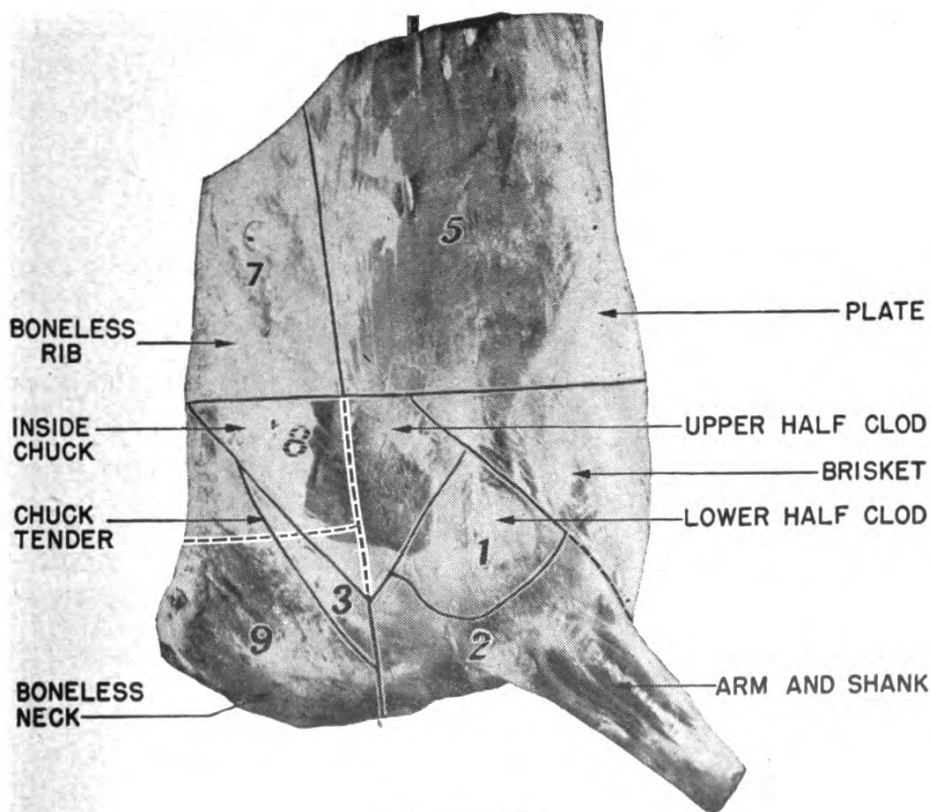


Figure 97.

and locations of the cuts that are made from the beef forequarter. Numbers 1, 3, 4, 7, and 8 are used for roasts and steaks. This makes up 20% of the quarter. Numbers 2, 5, 6, and 9 are used for braising, stewing, or grinding. About 53% of the quarter is included in these cuts. Surplus fat makes up 7% and bones 18% of the quarter. Again, only 2% is allowed for cutting and trimming.

TRIMMING

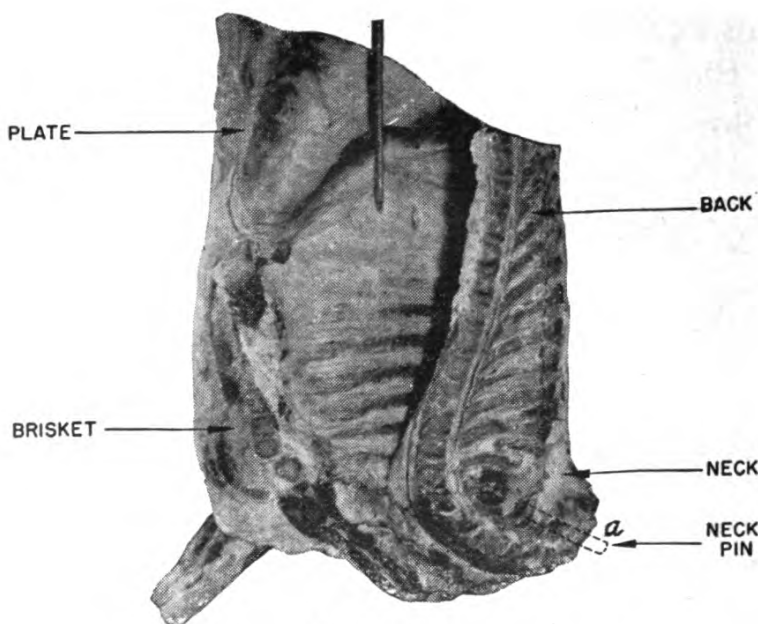


Figure 98.

First of all, hang the forequarter on the hook so it hangs evenly from its own weight (figure 98). Then do whatever trimming may be necessary from around the neck, plate, brisket, and back.

Use a knife to loosen and remove the neck pin shown in *a* of figure 98. Then cut between the 1st and 2nd vertebrae to remove the atlas bone (figure 99).

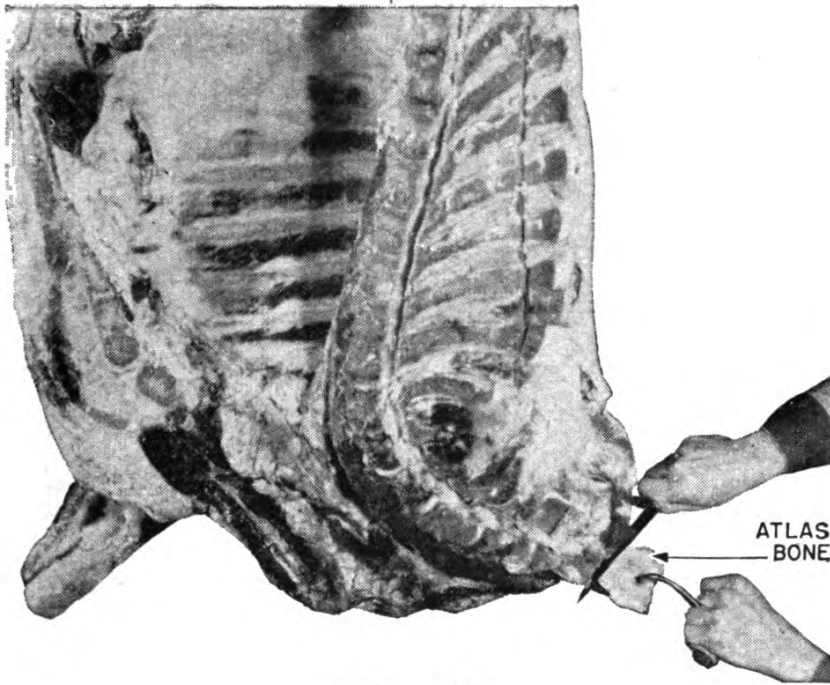


Figure 99.

Remove the heart fat lying along the edge of the breastbone as indicated in X of figure 100. Then trim the bloody meat from the throat side of the neck as illustrated.

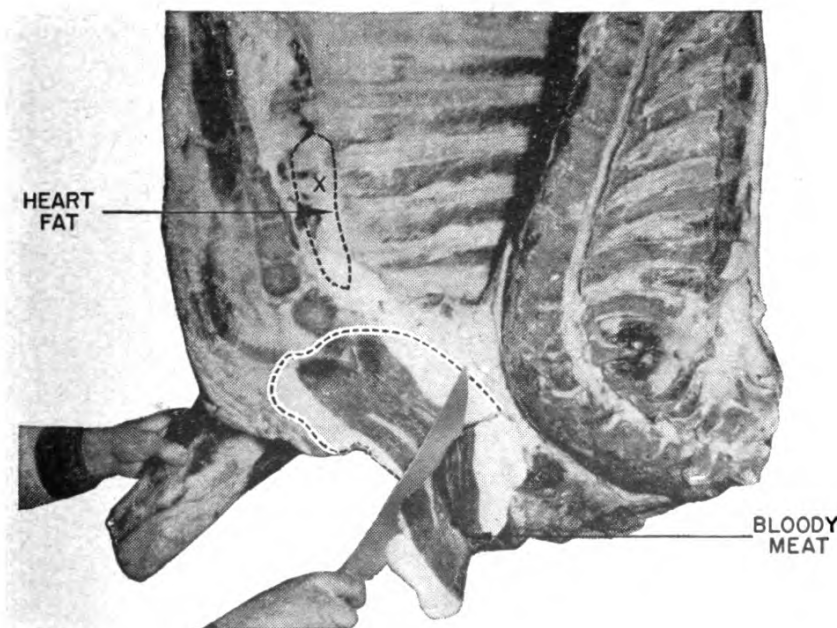


Figure 100.

Cut a thin strip (x) from the navel side of plate (dotted line in figure 101). Cut a narrow strip from the thin edge of the skirt (diaphragm) a to b .

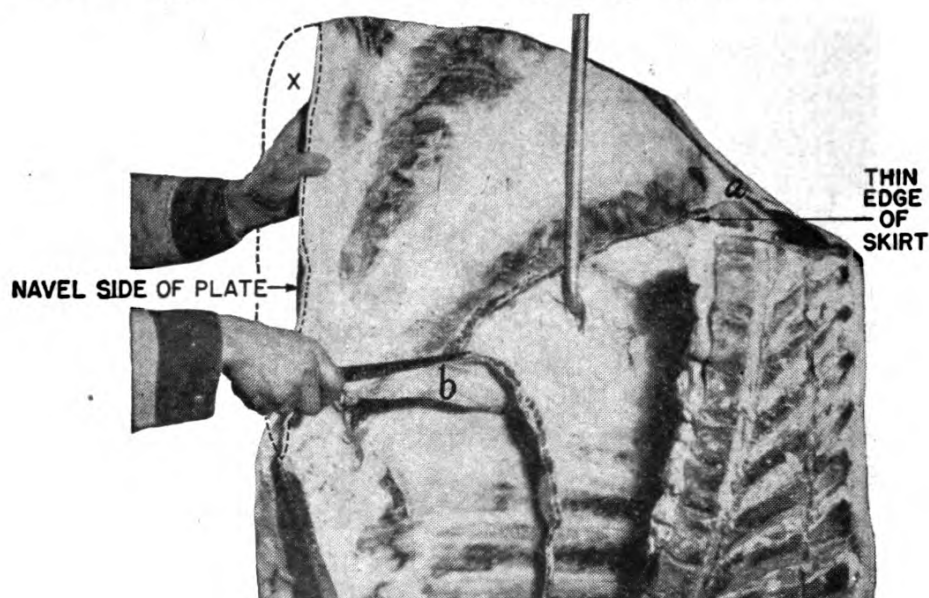


Figure 101.

The steps completed as shown in figure will enable you to pull the membrane from the skirt and plate meat (figure 102).

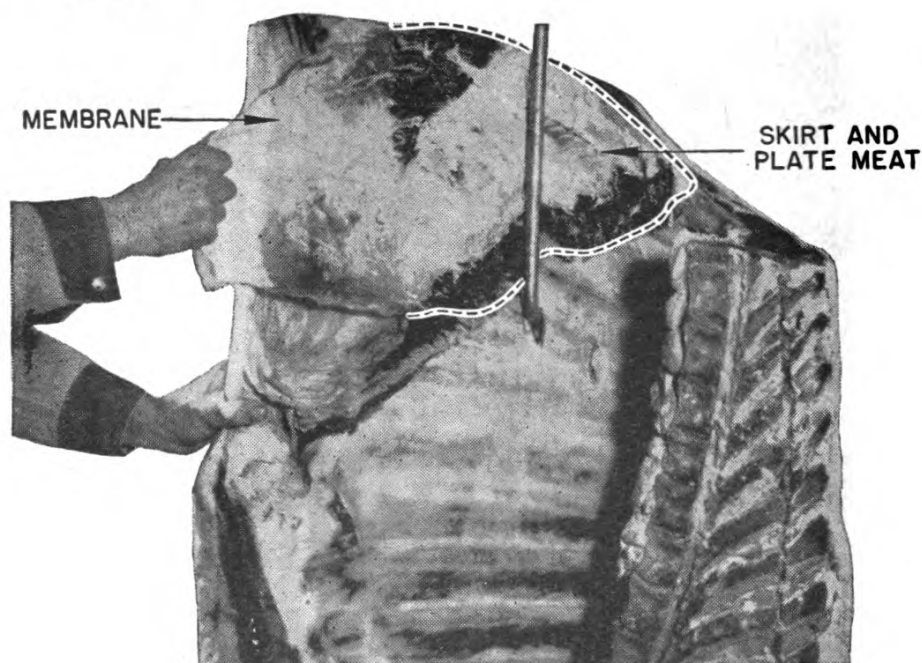


Figure 102.

REMOVING SKIRT AND PLATE MEAT

Start cutting under the skirt and plate meat at *a* and continue cutting close to ribs to point in figure.

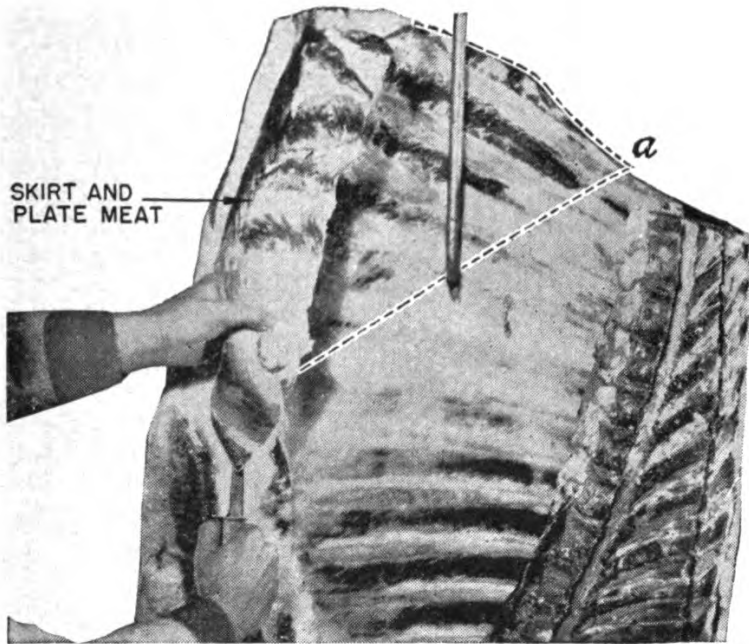
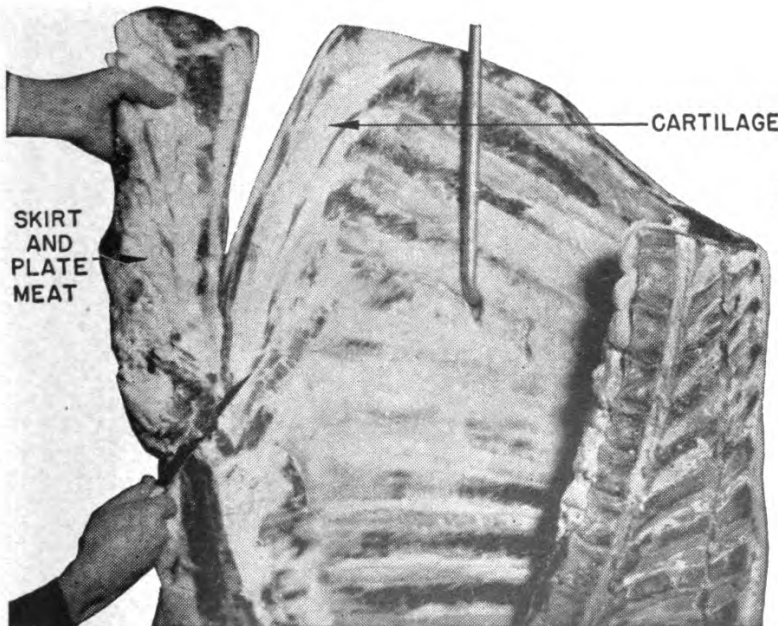


Figure 103.

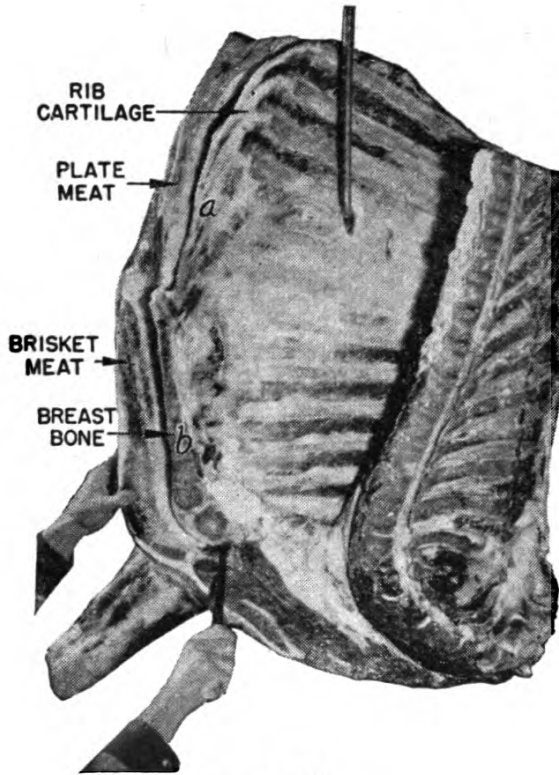
After cutting the meat free from the cartilage at the end of the rib bone, remove the roll of skirt and plate meat. See figure 104.



This meat is used for stewing or grinding.

Figure 104.

LOOSENING PLATE AND BRISKET



After removing the excess fat from the edge of the brisket, cut under the rib cartilage *a* and breastbone *b* to loosen the plate and brisket meat, (figure 105). Remove the strip of fat which covers the top part of the feather bones. Then remove the ends of the feather bones at point where they were scribed with saw (figure 106).

Figure 105.

TRIMMING THE BACK

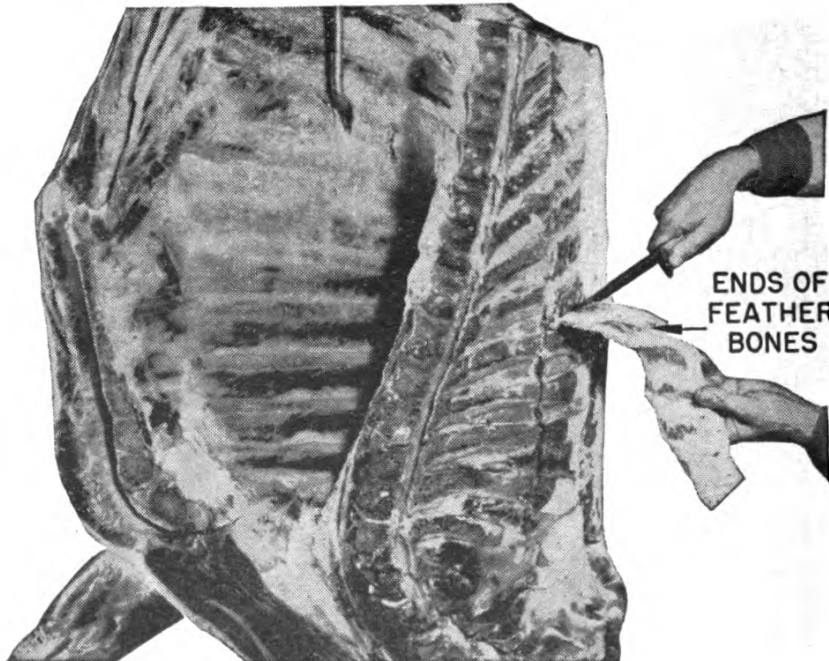
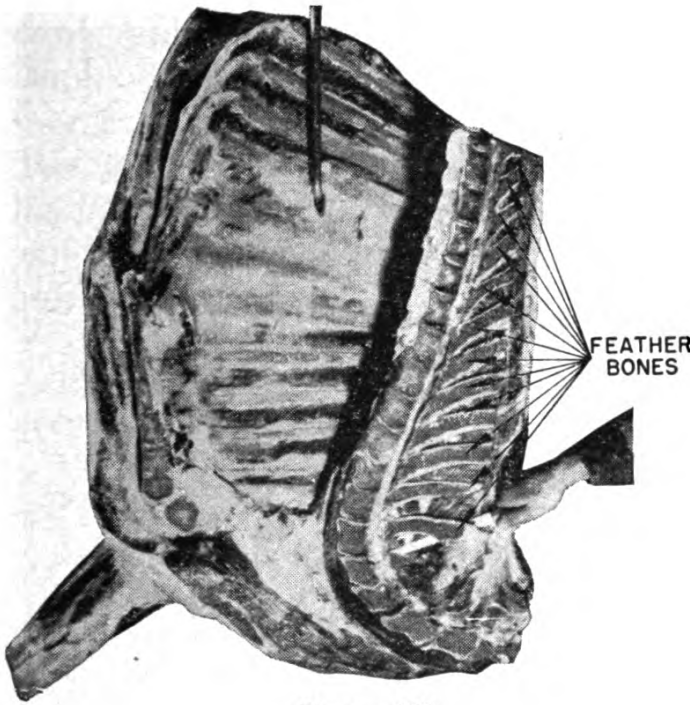


Figure 106.



Cut back under remaining sections of the feather bones to loosen these bones from the meat (figure 107).

Figure 107.

Pull the back strap from full length of forequarter (figure 108).

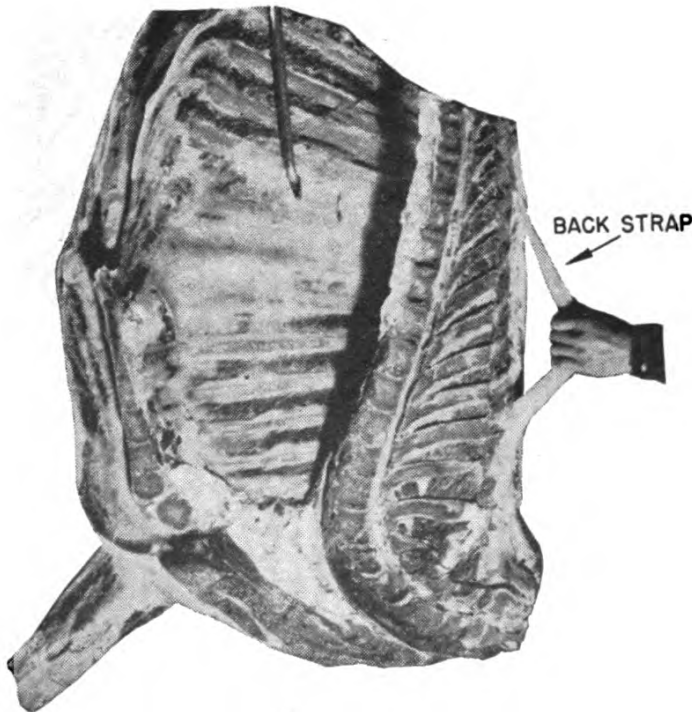


Figure 108.

MAKING THE OUTSIDE CHUCK CUTS

So far, all you have been doing is trimming. Now for some cuts. Figure 109 shows what should be done.

The cut between the 5th and 6th ribs from *a* to *b* is made first. Then, the arm and shank are removed. This is done by first cutting from *c* to *d* to *e*. A cut through the seam over the brisket beginning at line *c-f* makes it possible for you to remove the arm and shank from the rest of the quarter.

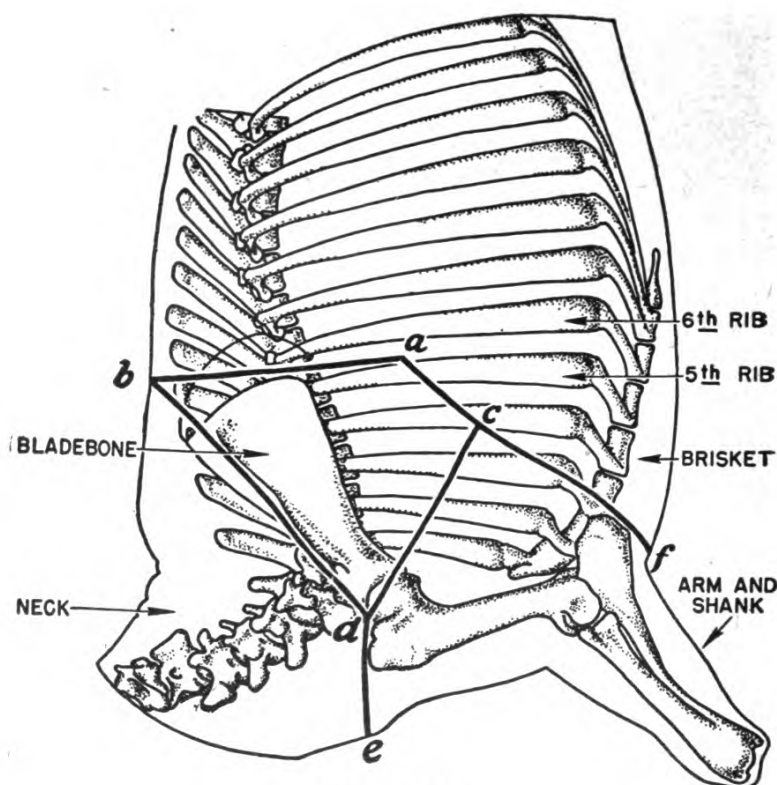


Figure 109.

A cut is then made over the ridge of the bladebone from *d* to *b*. The thin outside neck meat and fat pocket is next removed by cutting along the seam over the neck.

The remaining section of the outside chuck is removed by starting a cut at line *a-c* and cutting through the seam under the bladebone. The bladebone will be included with this piece.

Does it sound complicated? It will become clearer as you do it step by step. First of all, mark the fore-

quarter by inserting a boning knife between the 5th and 6th ribs so that the blade will show through on the opposite side (figure 110).

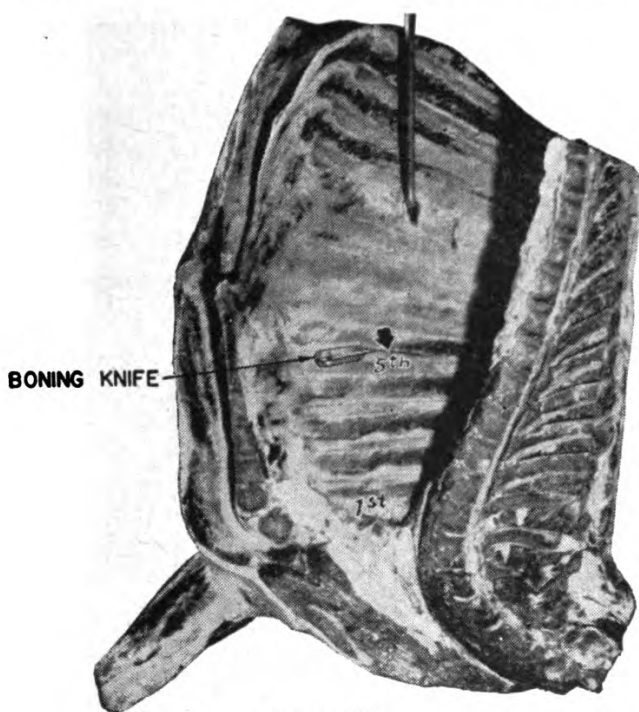


Figure 110.

Using the mark on the outside of the quarter as a guide, cut through the meat to the backbone from *a* to *b*, (figure 111).

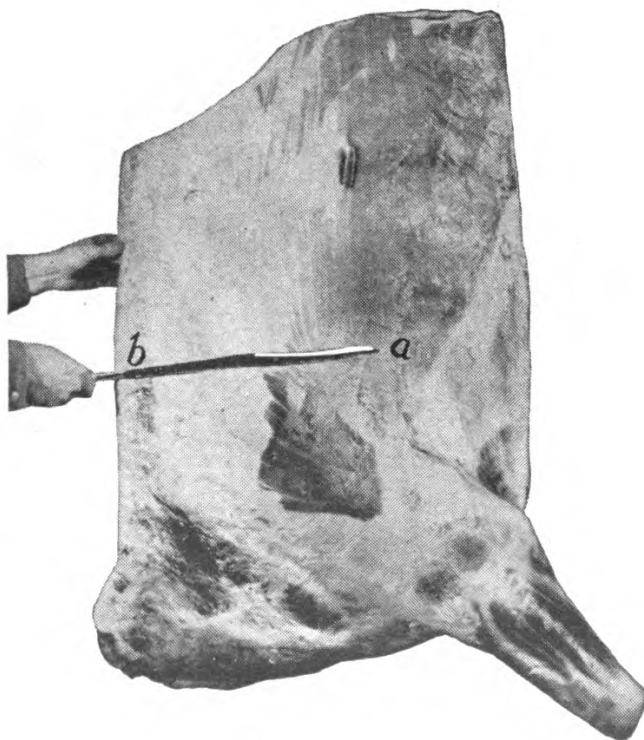


Figure 111.

Cut across clod and over the socket joint (*c* to *e*, figure 112). Cut through seam between arm shank and the brisket, starting along dotted line *c* to *f*.

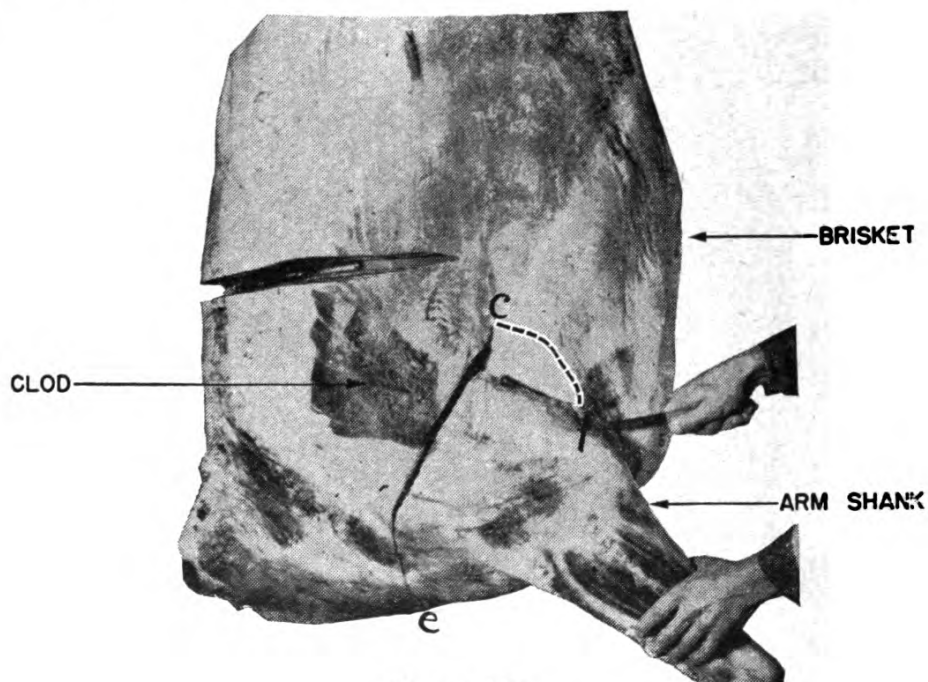


Figure 112.

The next step is to cut through the ball and socket joint and remove the arm shank (figure 113).

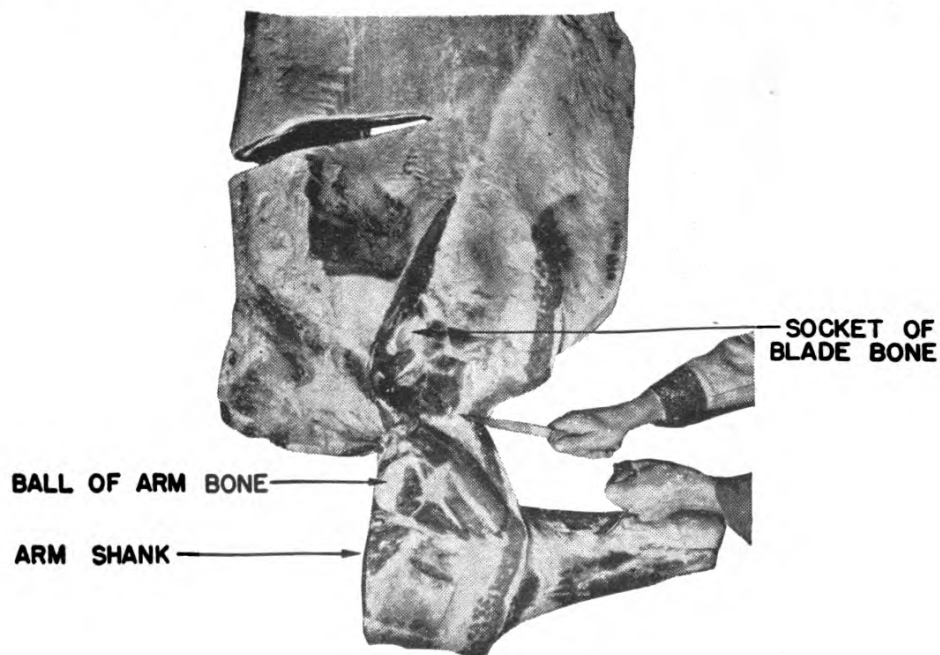


Figure 113.

Separate the lower half clod *a* from the arm shank *b* (figure 114). (The lower half clod is used for braising or roasting.)

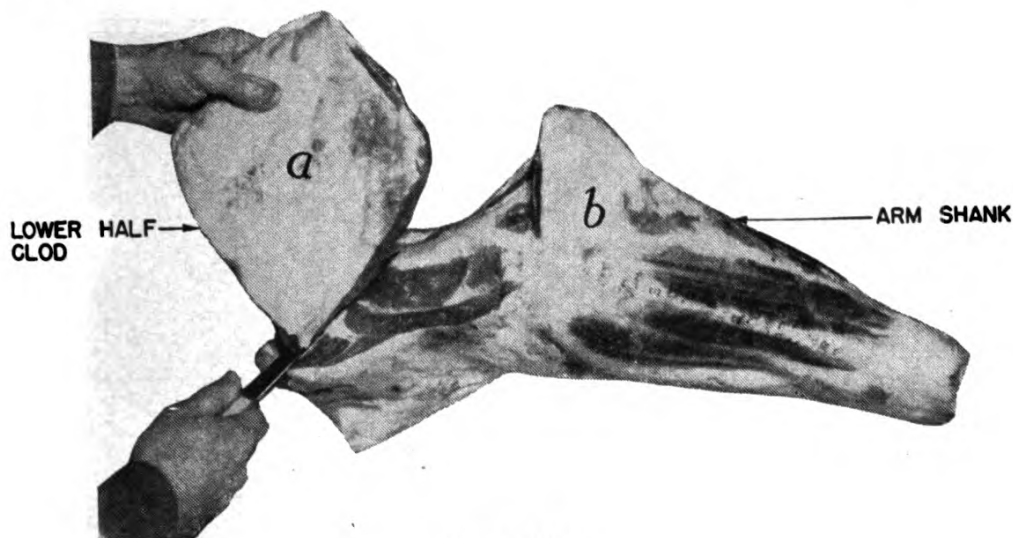


Figure 114.

Trim the meat from the arm and shank bones, (figure 115).

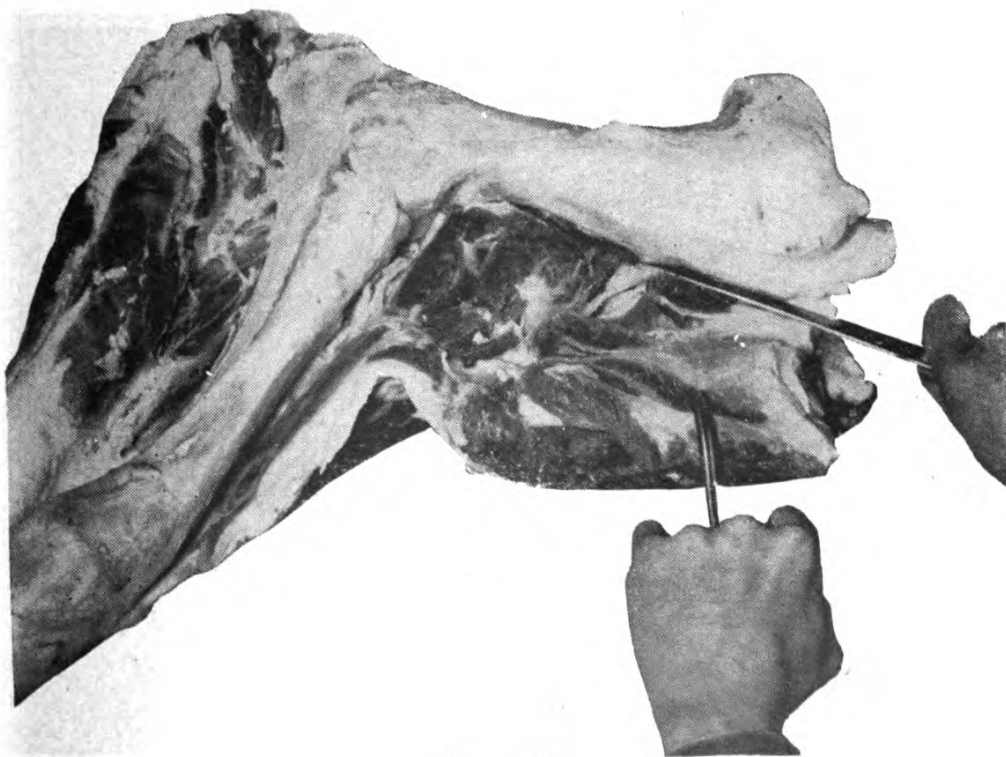


Figure 115.

Use this for stewing or grinding.

REMOVING OUTSIDE NECK MEAT

Cut through the meat from *b* to *e* over the edge of the ridge bone (figure 116). Remove the outside neck meat and pocket of fat by following the seam (figure 116) that separates it from the thick meat of the neck.

Trim out the surplus fat and use this thin meat for stewing or grinding.

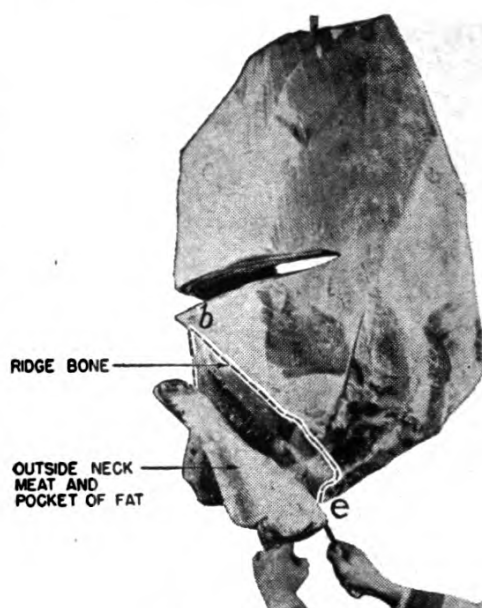


Figure 116.

REMOVING REMAINDER OF OUTSIDE CHUCK

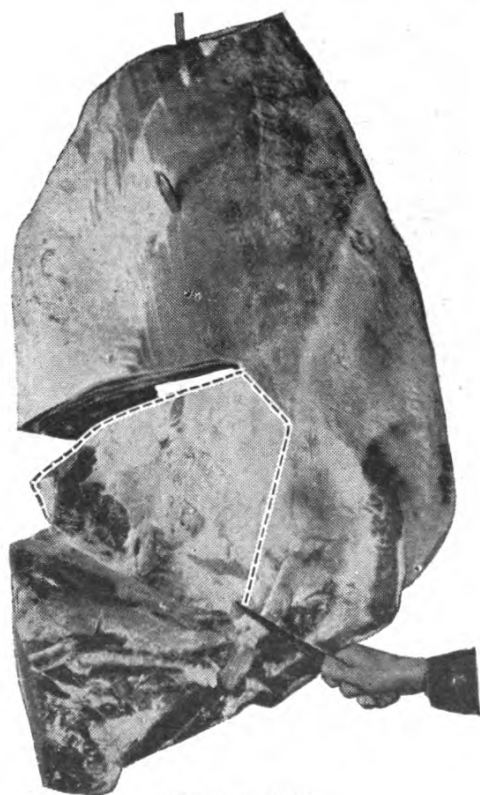


Figure 117.

Follow the seam to remove the remainder of the outside chuck (figure 117). This piece includes the blade bone.

REMOVING THE CHUCK TENDER

Take the piece just removed and cut along the ridge of the blade bone to remove the chuck tender (figure 118).

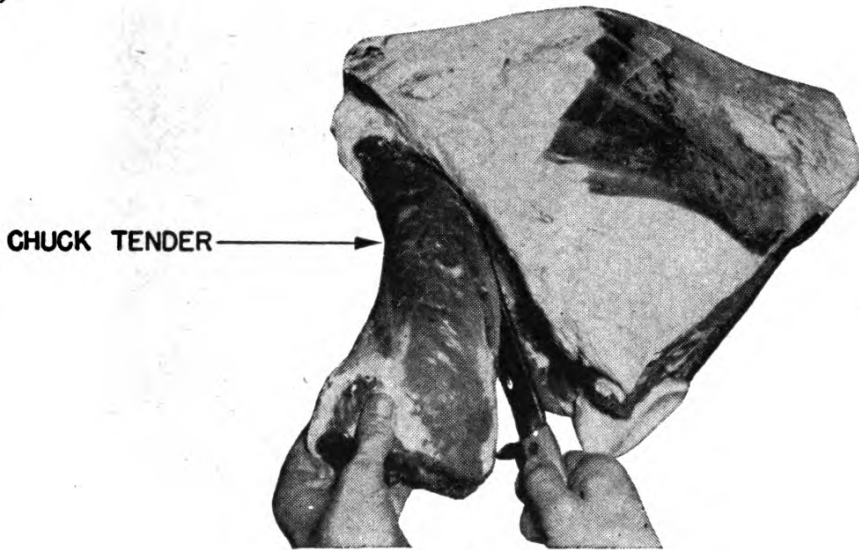


Figure 118.

The chuck tender is used for braising. It should be used for roasts only when absolutely necessary.

REMOVING BLADE BONE FROM UPPER HALF CLOD

Cut along the ridge and around the socket of blade bone as indicated in figure 119.

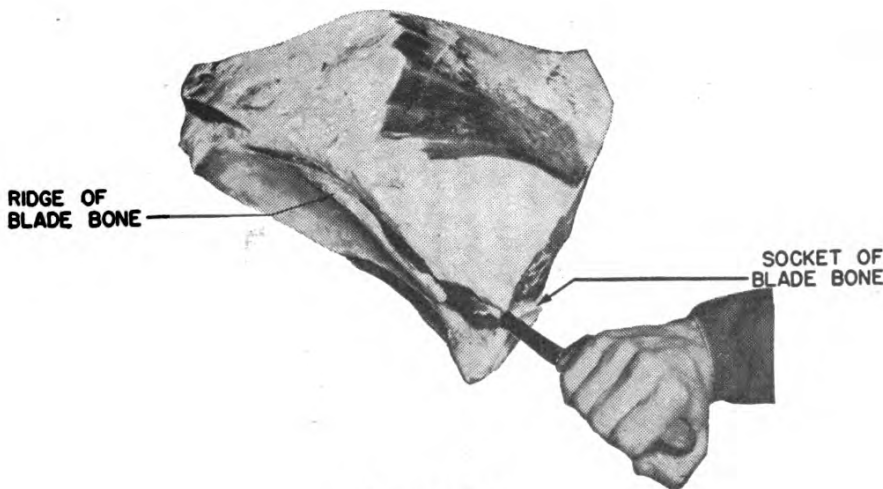


Figure 119.

Trim the thin layer of meat from the underside of blade bone (figure 120).

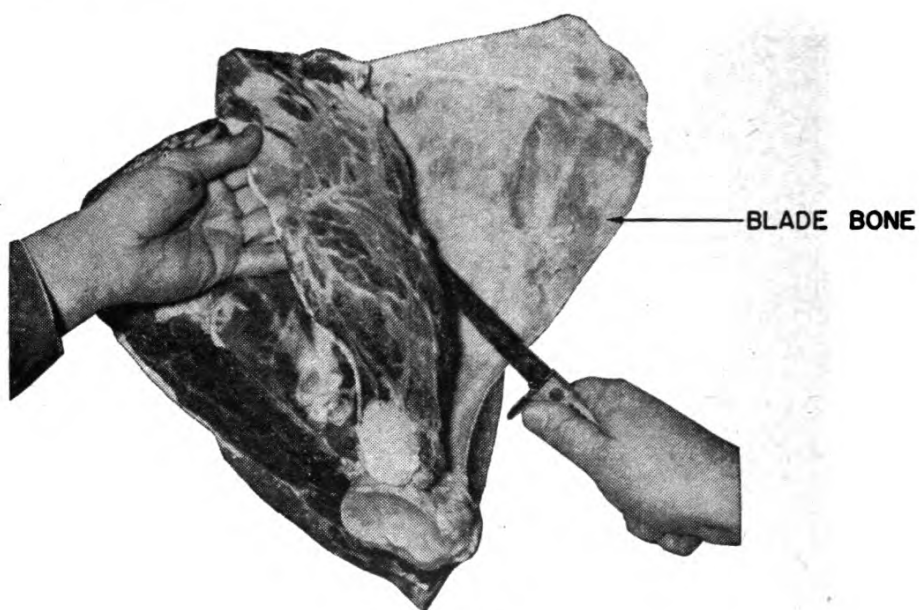


Figure 120.

Turn the cut over and remove the blade bone (figure 121).

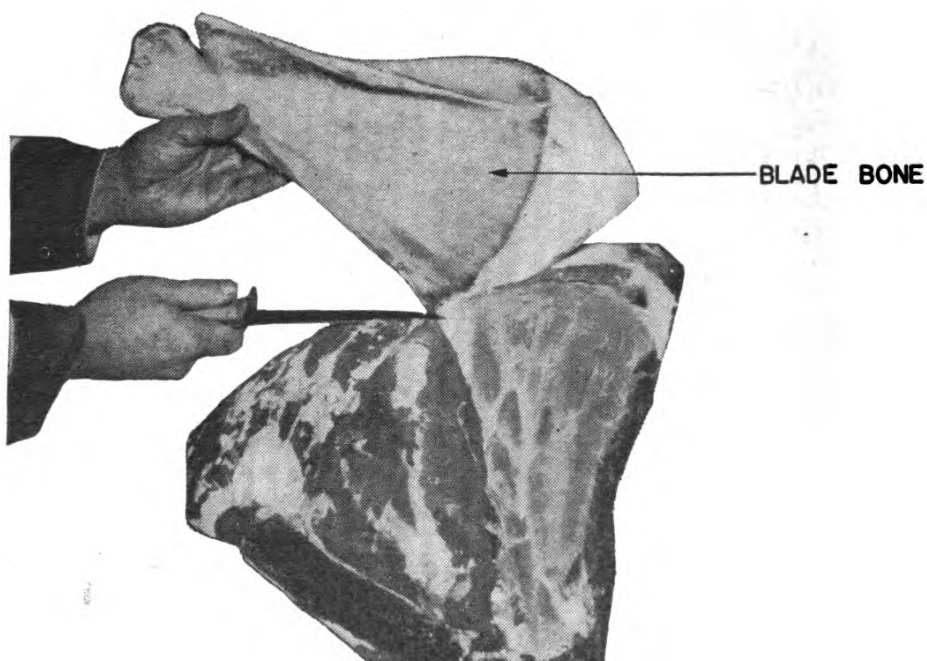


Figure 121.

TRIMMING THE UPPER HALF CLOD

Cut the thin meat (1 and 2) from the upper half clod as shown in figure 122.

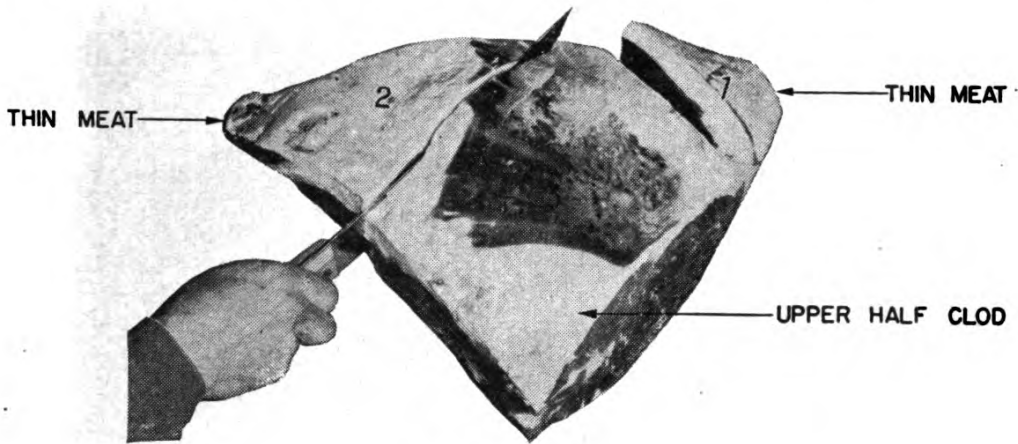


Figure 122.

Use the upper half clod (3) for braising, or roasting when necessary.

CUTTING REMAINDER OF FOREQUARTER

Separate the thin meat from the thick meat by cutting from *a* to *b* (figure 123) through all the meat

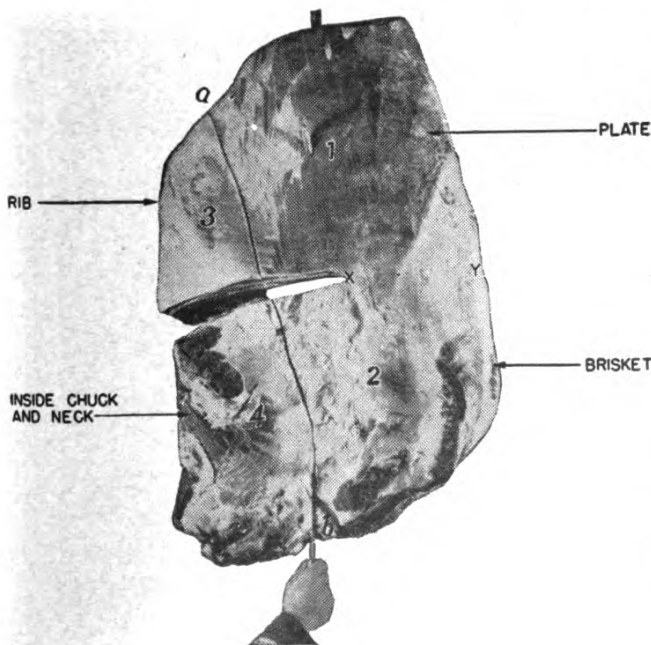


Figure 123.

to the rib bones. This cut separates the plate, 1 and the brisket, 2 from the rib 3 and the inside chuck and neck, 4. Now cut between 5th and 6th ribs (*x* to *y*) to separate brisket from plate.

Cut close to the ribs to remove the plate meat (figure 124). Figure 125 shows the boneless plate.

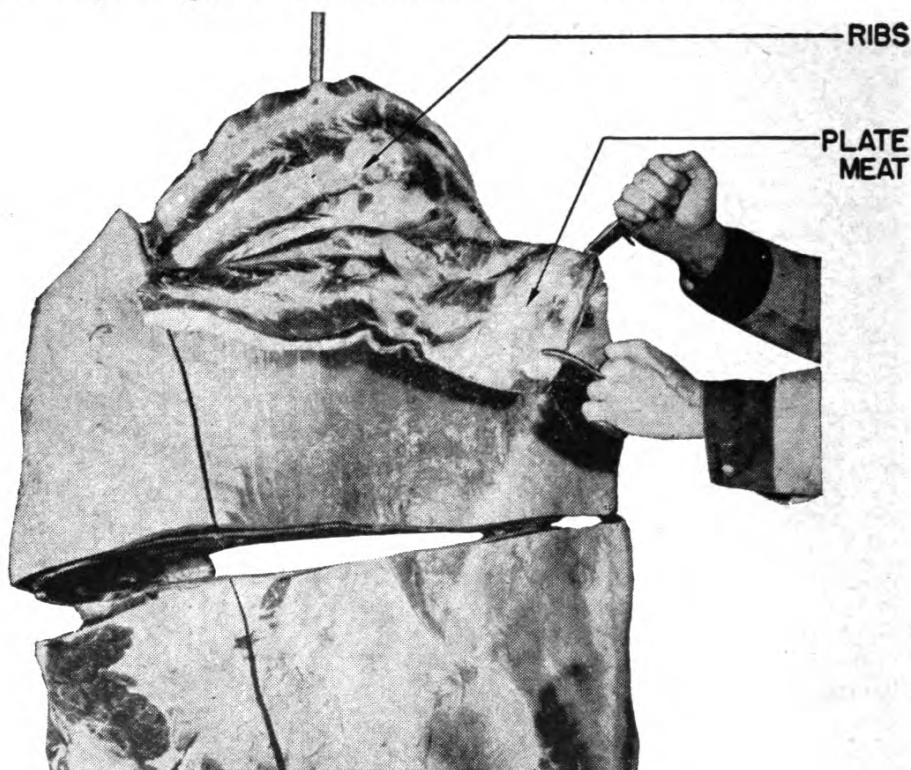


Figure 124.

Trim off the surplus fat and use meat for braising, stewing, or grinding.

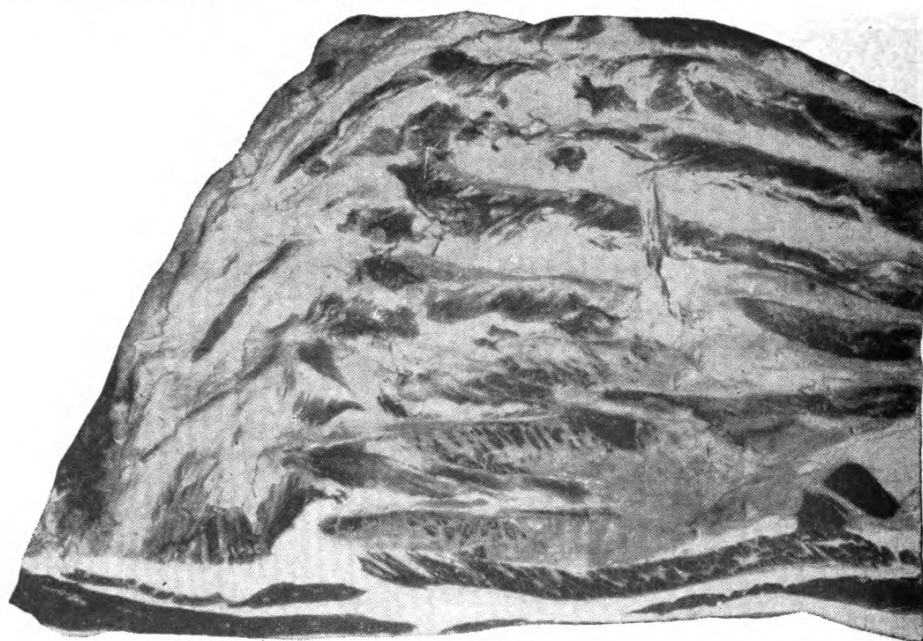


Figure 125.

REMOVING THE BONELESS BRISKET

Cut close to the ribs to remove the boneless brisket (figure 126).

Cut point (piece number 1) from brisket. (Figure 127). Divide the remainder into two pieces by cutting as indicated by dotted line.

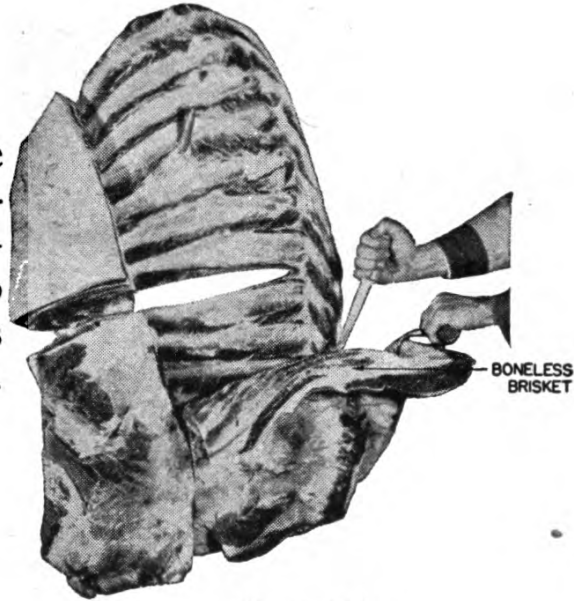


Figure 126.

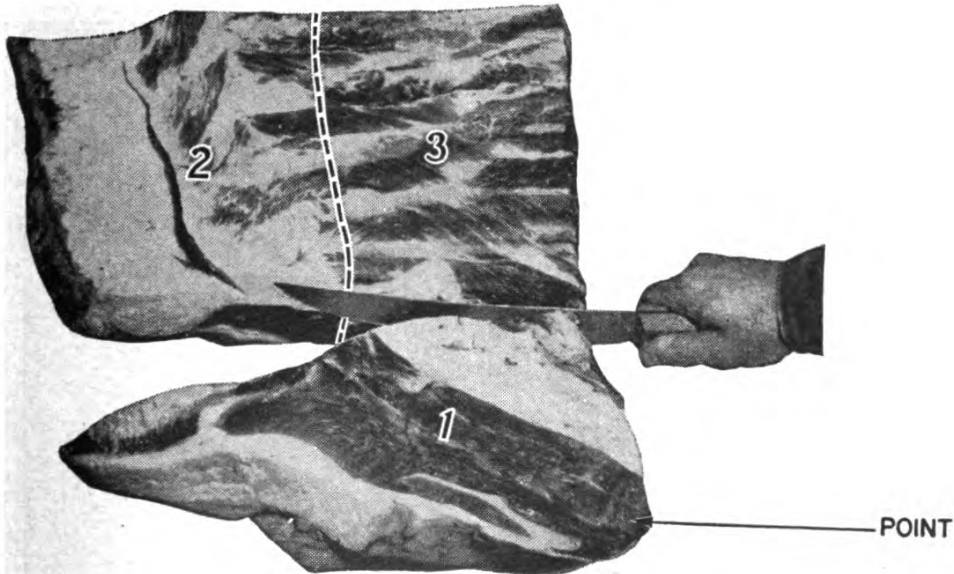


Figure 127.

Remove the excess fat from piece number 2 and use for braising, stewing, or grinding. Separate the lean from the fat in pieces 1 and 3. Use the lean meat for stewing or grinding. Render the fat.

REMOVING AND TRIMMING THE BONELESS RIB

Remove the boneless rib by cutting close to the rib bones (figure 128).

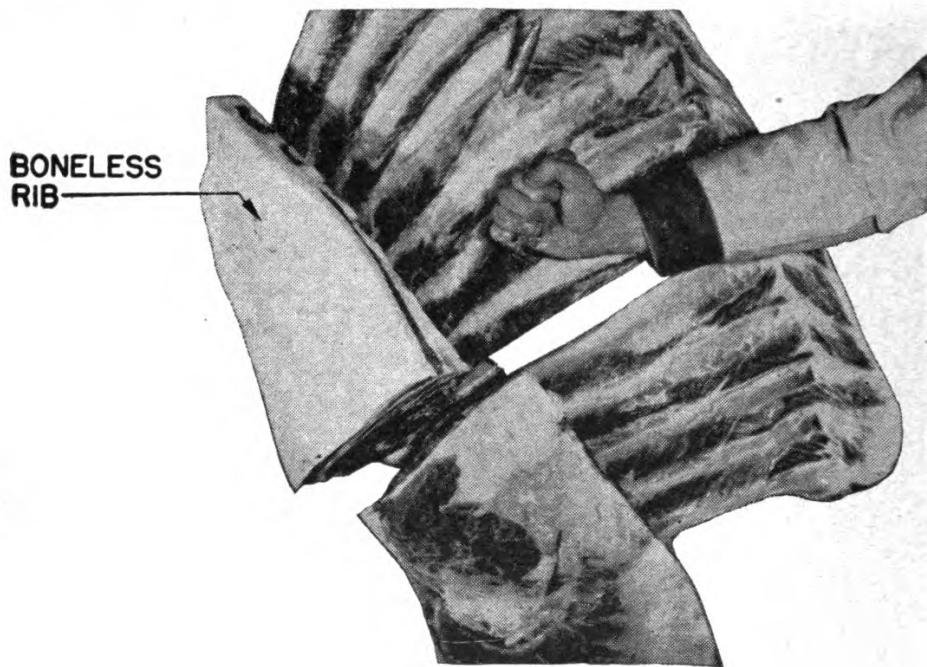


Figure 128.

Following line *a* to *b* (figure 129) cut through the thin meat above the rib "eye" just back of the blade bone cartilage. Remove the piece of thin meat and blade cartilage by following the natural seam.

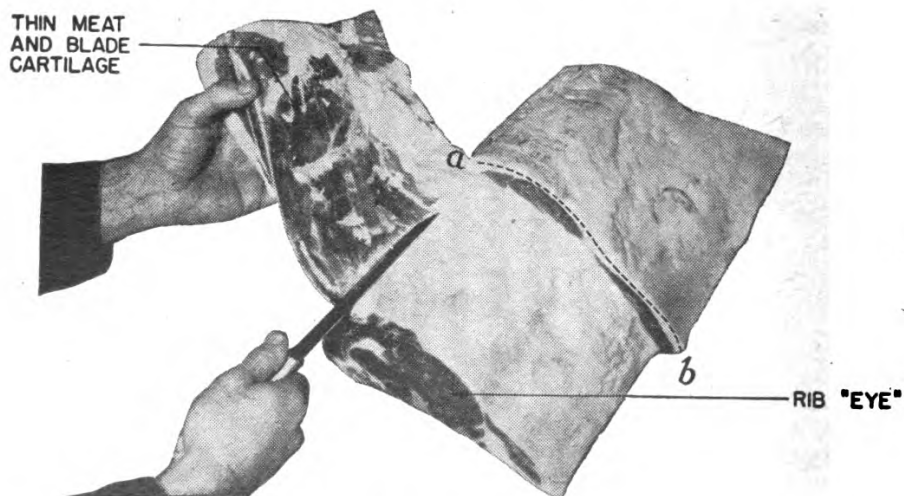


Figure 129.

After removing the blade cartilage, separate the remaining lean from fat and replace the layer of fat over the unprotected section of the boneless rib (figure 130). The boneless rib is excellent for roasts or steaks.



Figure 130.

Cut close to the ribs to partially remove the inside chuck and neck (figure 131).

REMOVING THE INSIDE CHUCK AND NECK

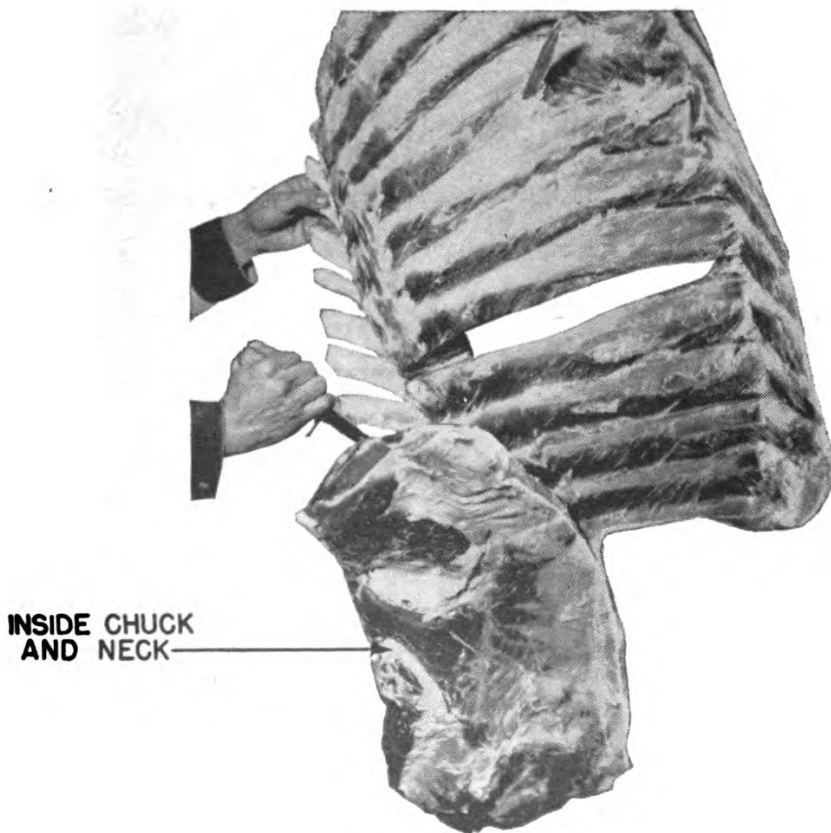


Figure 131.

Finish removal by cutting through the joint just ahead of the 1st rib shown in figure 132. This separates the neck bone from the back bone.

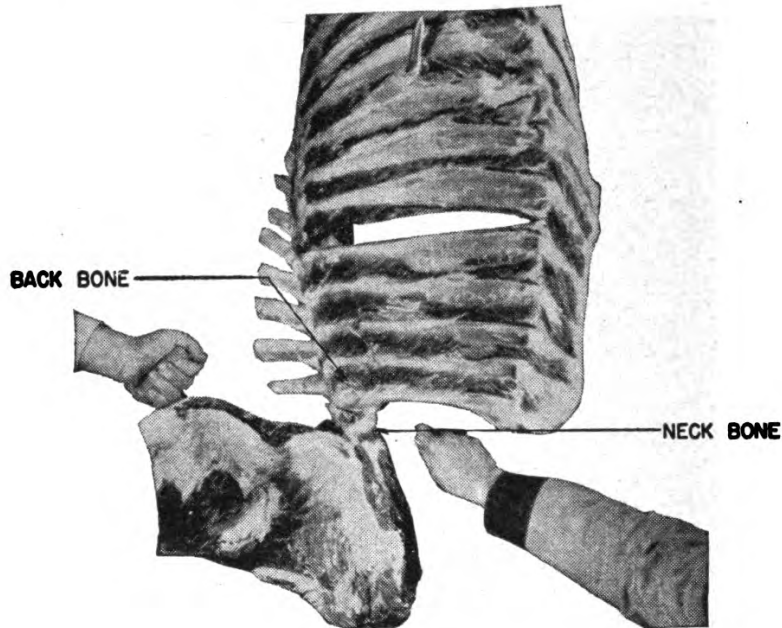


Figure 132.

CUTTING THE INSIDE CHUCK AND NECK

Remove strip of meat from the throat side of the neckbone, (figure 133).

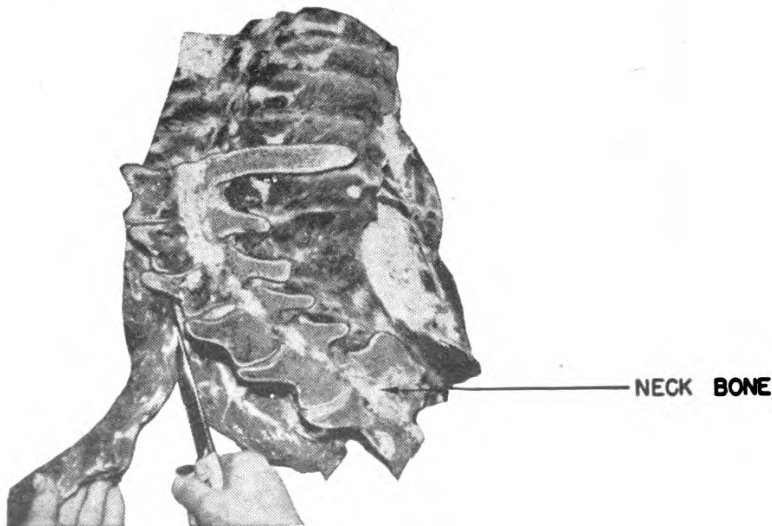


Figure 133.

Cut underneath the neck bone and lift it from the neck meat (figure 134).



Figure 134.

Trim off the thin meat (pieces number 1 and 2) in figure 135. Cut remainder into the two pieces numbered 3 and 4.

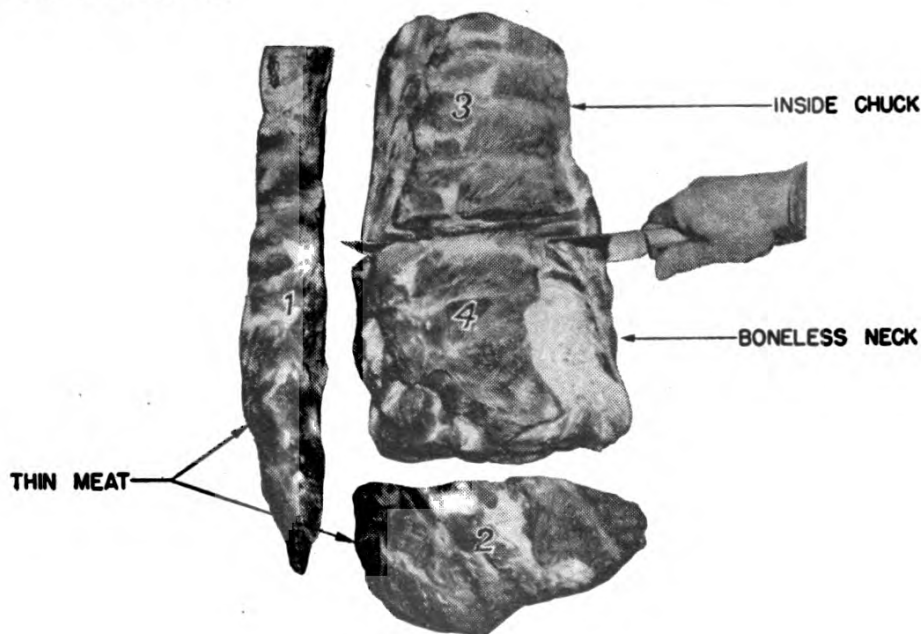


Figure 135.

The inside chuck, number 3, is used for roasting or steaks. The boneless neck, number 4, is used for braising, stewing, or grinding.

TRIMMING THE BONES

Trim fat and strip of meat from inside of chine bone (figure 136).

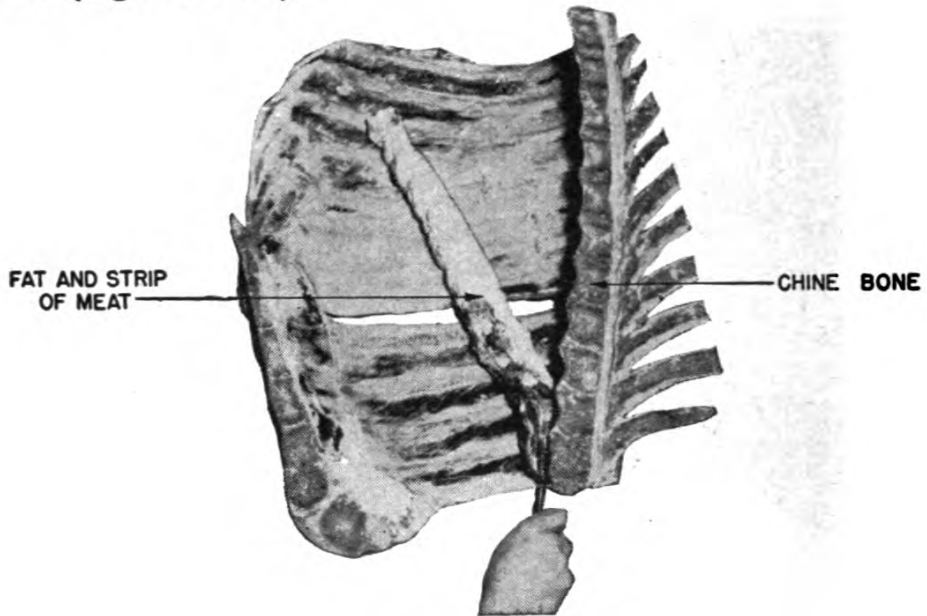


Figure 136.

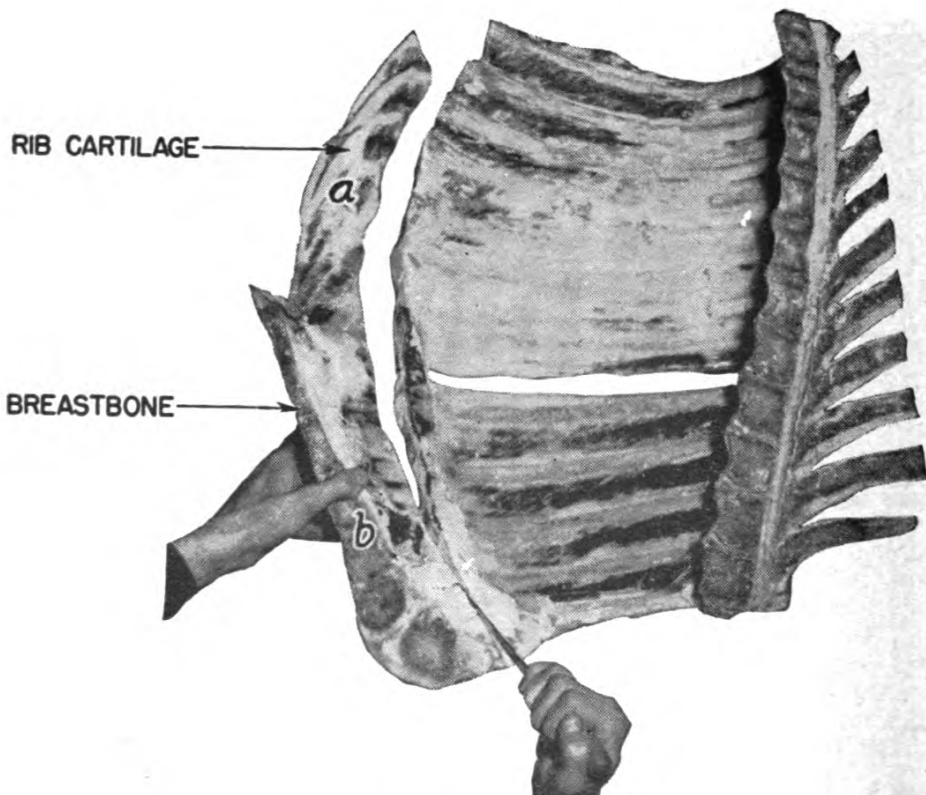


Figure 137.

Cut through cartilage at ends of rib bones to remove rib cartilage *a* and breastbone *b* in figure 137.

Look at figure 138. Trim the meat (1) from the rib cartilage and the breastbone (2). Remove the rib fingers (3) by cutting along the sides of each rib bone.

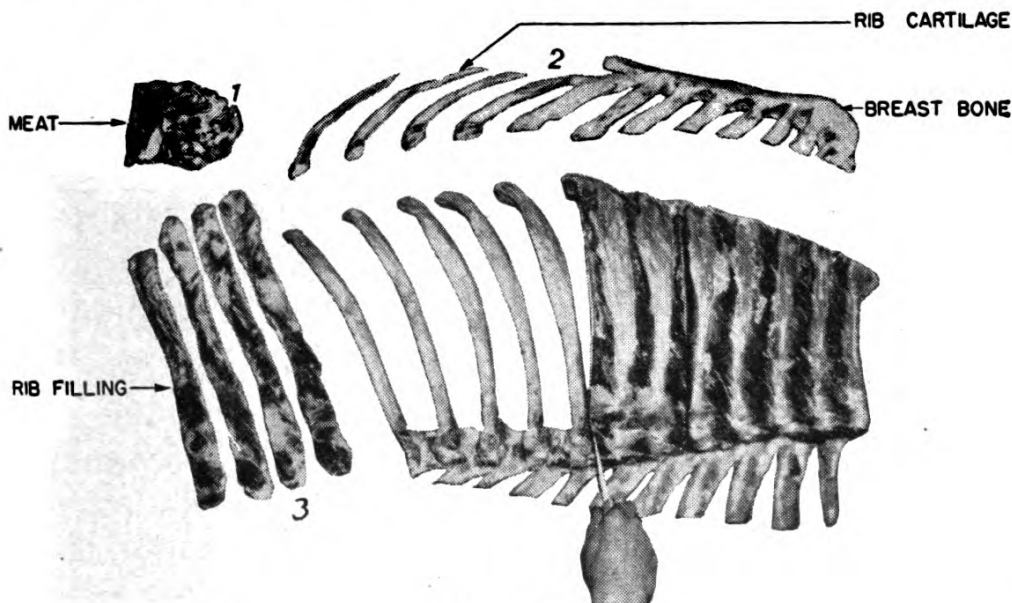


Figure 138.

Use the boneless meat for stewing or grinding. Saw and use the bones for stock.

LAMB

Even though lamb and beef carcasses don't look much alike, their framework of bones is the same.

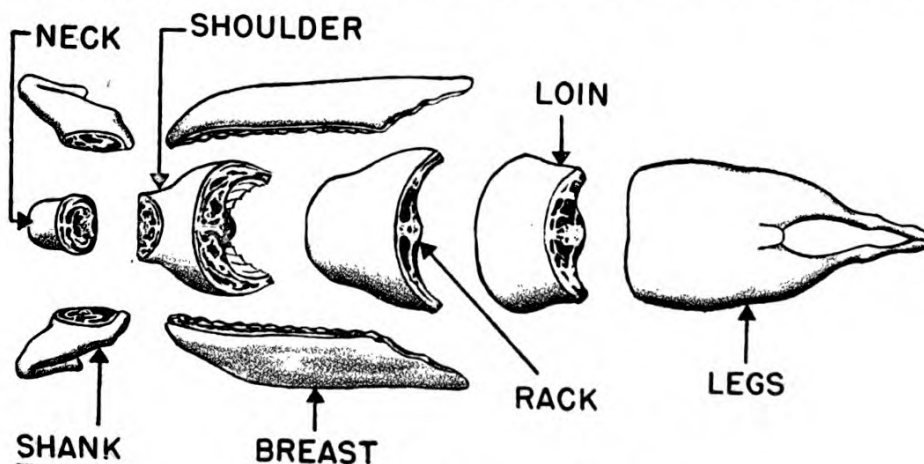


Figure 139.—Main cuts of lamb.

Fresh frozen beef is usually delivered in quarters. As lamb is much lighter than beef, it is brought aboard in whole carcasses. Your cutting job will be a little different.

The lamb chart (figure 139) shows the lamb carcass broken into the usual main cuts.

The heavy lines in figure 140 show from a side view where these same cuts are made.

Notice the framework of bones in this figure. Here's how to make these cuts—

MAKING THE CUTS

Put the lamb on the block with the back up. Remove the neck at the point where it joins the shoulder.

Turn the carcass on its side, and remove the breasts

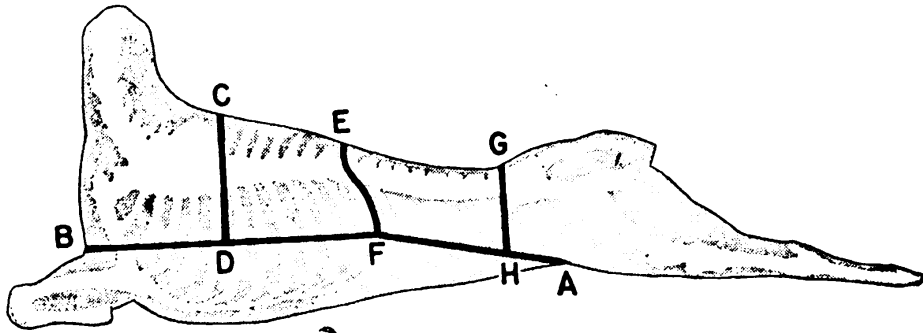


Figure 140. Cutting the lamb carcass.

and shoulder by cutting along the line *a-b* shown in figure 140.

Then separate the shanks from the breasts.

Turn what's left of the lamb on its back. Cut between the 5th and 6th ribs through the backbone (line *c-d* in figure 140) to separate the shoulders from the rack.

Then cut the rack from the loin by cutting across both flanks to the backbone. This cut is to be made back of the 13th rib (line *e-f* in figure 140). There should be eight ribs in the rack and five ribs in the shoulder.

Now separate the loins from the legs by cutting along *g-h* in figure 140. This cut is made just in front of the hipbones.

How can these cuts be used?

LAMB FOR ROASTS

The shoulders, rack, loin, and legs are best for roasting. You can usually get 6 good roasts from these cuts—2 from the legs, 1 each from the loin and rack and 2 from the shoulder.

You can make the cooking and carving jobs easier by boning and rolling these roasts.

LAMB FOR STEWS

The thin cuts—the breasts, shanks, and neck are best suited for stew and ground meat dishes. If you need some of the other cuts to get enough meat, use the shoulders. Remove all bones and excess fat from the meat and cut the meat into small pieces. Never use the cleaver when doing this as splinters of bone will remain in the meat.

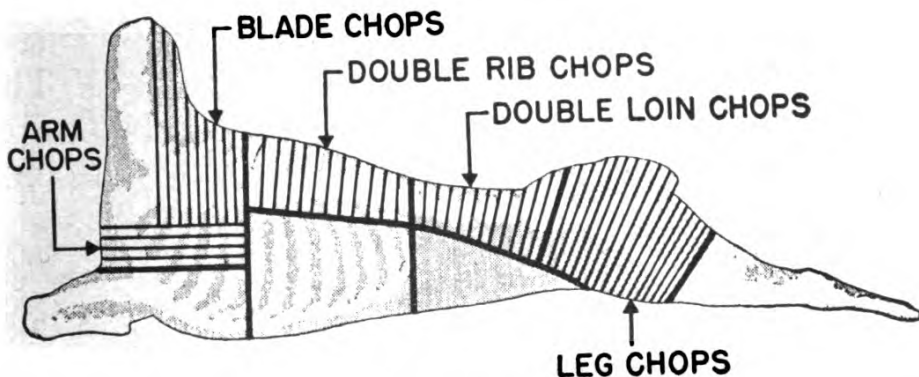


Figure 141.

LAMB CHOPS

Chops can be cut from the legs, the loin, the rack, and the shoulders. But, if you want to serve chops, it's better to cut up the carcass with that in mind. About $\frac{1}{2}$ of the lamb carcass is suitable for chops.

Two-fifths of what's left can be used for other servings—mostly stew and chopped lamb.

Chops are particularly easy to cut if you have an electric meat saw. Here's how it's done—

CUTTING LAMB CHOPS

The heavy lines in figure 141 show where the main cuts are to be made. The lighter lines show the cuts to make in order to get the separate chops. Now, take it step by step.

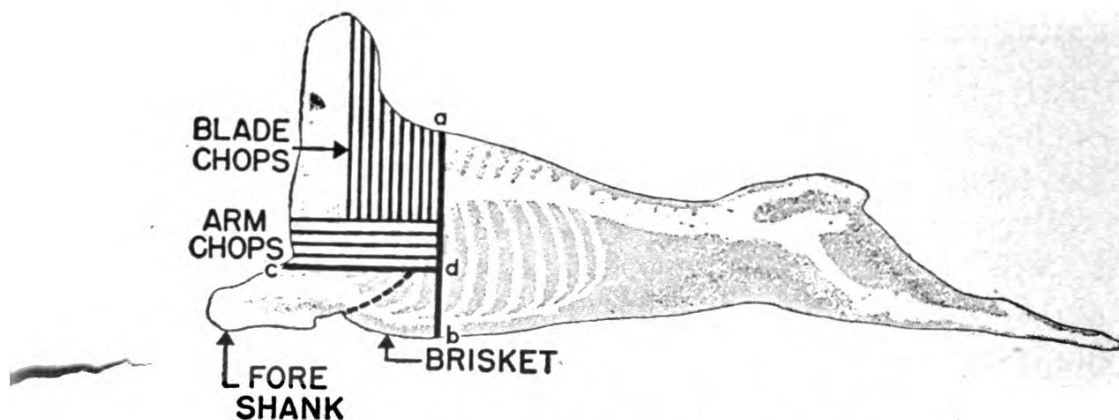


Figure 142.—Lamb shoulder chops.

SHOULDER CHOPS—Remove the chuck by cutting through the 5th and 6th ribs (*a-b* in figure 142). Then cut from *c* to *d* to remove the shank and brisket from the shoulder. Cut the shoulder into arm and blade chops as indicated in this same figure.

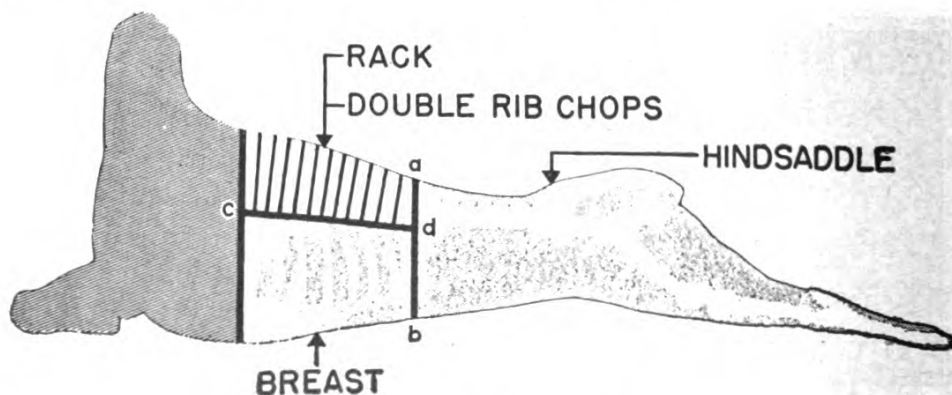


Figure 143.—Lamb double rib chops.

DOUBLE RIB CHOPS—Separate the rack and breast from the hindsaddle by cutting back of the 13th rib (*a-b* in figure 143). Cut across the ribs about one inch from the rib eye muscle (*c-d* in figure 143). This cut separates the breast from the rack. Cut the rack into chops as indicated.

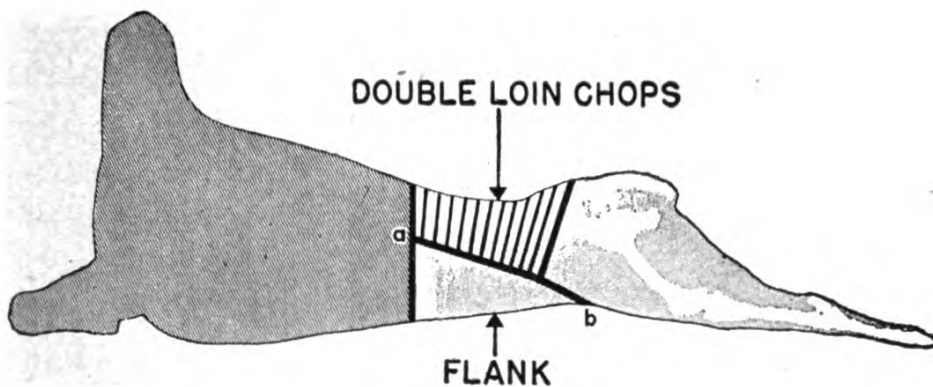


Figure 144.—Lamb double loin chops.

DOUBLE LOIN CHOPS—Remove the flank from the hindsaddle by cutting along line *a-b* in figure 144. Then cut your chops as pictured.

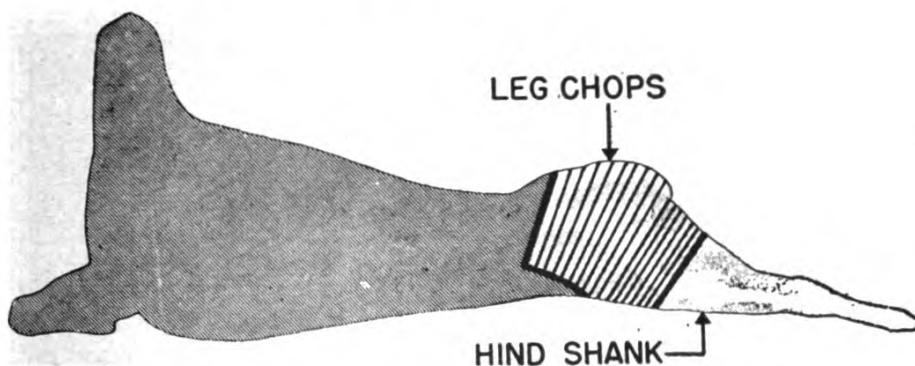


Figure 145.—Lamb leg chops.

LEG CHOPS—Split the legs and cut them into chops as shown in figure 145.

USING WHAT'S LEFT—The light section in figure 146 shows you what's left of the carcass after the chops have been cut. These sections should be boned and used for lamburgers or lamb patties.

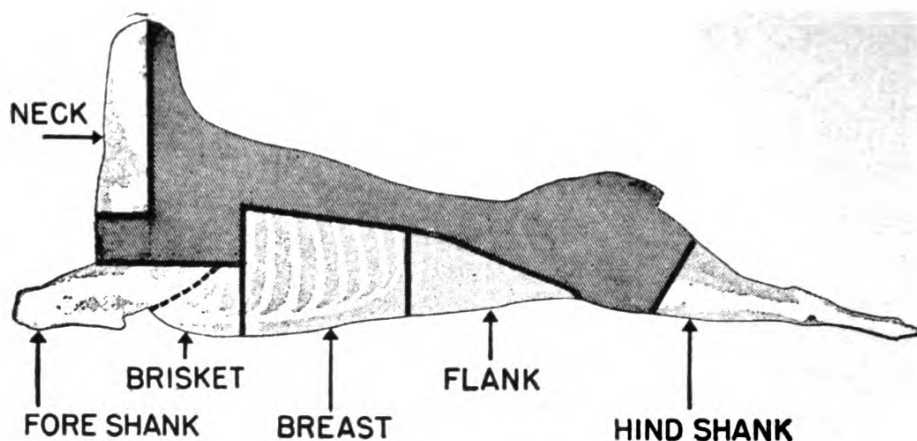


Figure 146.—What's left.

CUTTING VEAL

The bone structure of veal is the same as that of beef. Veal is usually brought aboard as whole carcasses or as sides. Heavy veal carcasses should be split down the center of the backbone.

The sides should then be divided into quarters. These quarters may be cut up in the same way as you cut beef.

Light veal carcasses may be cut into boneless roast and boneless stew meat in the same way recommended for the major cuts of lamb.

PORK

Packing plants cut hog carcasses into the wholesale cuts shown in figure 147.

The usual fresh cuts brought aboard are picnics, butts, loins, and spareribs. Fresh hams aren't used very often.

You'll find it easy to prepare these cuts for use.

PICNICS AND BUTTS

Picnics and butts can be used as roasts or as steaks. The steaks are cut much like the arm and blade bone

lamb chops. See page 158. The steaks from the picnics are similar to the arm bone lamb chops. The steaks from the butt are cut like the blade bone lamb chops.

PORK LOINS

Pork loins are used most commonly for chops. These chops may be boneless or have the bone left in. The loins also make good roasts.

Remove the bones from the roasts before cooking to make the carving job easier. The boneless pork loin should then be cut into two pieces of equal length. Lay these two pieces together, fat sides out. Keep the thick ends of the loins at opposite ends of the boneless roast. Tie the two pieces together to make your roast compact.

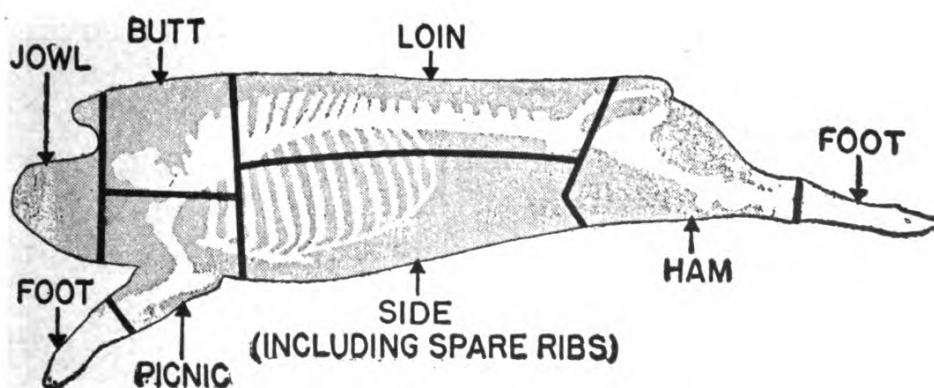


Figure 147.—Wholesale cuts of pork.

SPARE RIBS

A good way of cutting spareribs is to remove the breastbone and then slice between the ribs. This method of preparation makes the ribs easy to serve.

THE HAMS

A fresh ham weighing less than 12 pounds may be made into a single boneless roll suitable for roasting. Heavier hams should be cut into two roasts of uniform size.

SMOKED MEATS

Smoked meats are important in the Navy menu especially when refrigeration facilities are limited. Fresh meat can't be kept very long unless it is frozen and frozen meat must be kept at a low temperature. Smoked meats keep for a long time at moderate temperatures.

CUTTING SMOKED MEATS

Smoked hams and picnics are the only two cuts that may give you any trouble in cutting. These cuts are easier to carve and serve if you remove the bones before cooking.

Remove the bones in a smoked ham the same way as you do in a beef round. See page 128. Take the shank off at the stifle joint. Remove the aitch (rump) bone. Cut along the leg bone on either side to remove the knuckle section. Lift the leg bone out. Divide the cushion side of the ham into two pieces by following the natural seam, separating the inside and outside muscles. Uniform slices of ham may be cut from the knuckle and the two cushion pieces by slicing the cuts from end to end.



CHAPTER 10

WHAT'S COOKING

WHY COOK

Why cook, anyway?

You'll get part of the answer if you try to eat a raw beet. Raw beets just don't taste good. They need to be cooked to make you want to eat them. Or, try eating a raw steak—just a bit on the tough side. And if you do manage to eat some, your stomach may object plenty later on. The steak must be prepared in such a way that the meat becomes more palatable and tender. Then you can eat it easily and digest it readily. Cooking also performs the worth-while job of KILLING any germs which might be in or on the food.

Some fruits and green vegetables are both appetizing and palatable in the raw state, but you should know how to cook them when necessary.

SOUPS

Soup is a tasty, nutritious, and wholesome food. It is liked by the men. It's fairly easy to make. And it

can be prepared in many different ways for variety. Because soup is such a nutritious addition to any meal, you should serve it with the evening chow every few days even in warm weather. Most of the ingredients of soup are inexpensive bones, less desirable cuts of meat, liquids in which vegetables are canned or cooked, and vegetables themselves. There is a lot of food value in all of them. Don't waste them—put 'em in the soup.

SOUP STOCK

Most soups are made from stock. (Consult your *Navy Cook Book* for the details.) Stock is made by using sawed up bones and small pieces of meat. These are mixed with vegetables and allowed to simmer in vegetable juices or water for several hours. The stock is then strained off from the solids—it is then ready to form the basis of any soup.

Beef bones are most commonly used for stock, but you can also get good stock by combining beef and veal bones. The lean meat and bones of lamb and mutton are good for making stock used for broth. Get rid of most of the fat before using. Stock from smoked ham shanks is good for flavoring bean or pea soup.

Soup stock spoils easily. Make it fresh every day. Cool it, and then place it in the refrigerator. Be sure the stock containers are clean. A layer of fat usually forms on the surface of the cold stock. When you are ready to use the stock, remove this layer of fat.

USE OF VEGETABLES IN SOUP

The vegetables most commonly used for soup are celery, carrots, beans, peas, green pepper, onion, tomatoes, and okra. Cut the vegetables into small cubes, or into match-like strips called "Julienne". If you use them Julienne, cook them separately until they're tender—but use as small an amount of water as possible.

Then add both solids and cooking liquid to the stock. This cooking liquid contains valuable vitamins as well as some of the vegetables' flavor. Spices such as all-spice, bay-leaf, celery or onion salt, chives, cloves, mace, marjoram, parsley, paprika, pepper, savory, sweet basil or thyme may be used for seasoning.

KINDS OF SOUP

Now, what kind of soup do you want?

You can prepare a **CLEAR** soup—bouillon or consommé—by straining the stock and letting it cool. Then it must be left in the refrigerator until the fat hardens on top. When you're ready to serve the soup, remove the layer of fat and heat the stock.

A **JELLIED** soup can be prepared from a clear soup by adding gelatin.

Maybe you wish to serve a broth. Strain the stock and add some vegetables. But be sure you don't add anything that will thicken the stock. Broth is a **LIGHT** soup.

When the weather is cold or stormy or when the rest of the meal is light, you may want a **THICK, HEAVY** soup. To get this, add a thickener to the stock. Flour, barley, corn meal, rice, or noodles will do the trick.

CREAM soups are made with hot milk. This is another way of getting the men to drink milk.

Once in a while it's a good idea to make soups with peas, beans, or lentils that have been put through a sieve. Such a soup is called a **PUREE**.

MEAT

Your future as a cook is bright if you know how to prepare meats properly. Do you know how this is done?

The tender cuts should be used for broiling, griddle-broiling, or roasting; the tougher ones for stewing and for grinding into meat suitable for meat loaves

or hamburgers. Chapter 9 tells you which cuts are best for these various uses. Cut the meat into equal-sized pieces so it will all be done at about the same time.

You can improve lean meat by inserting lard between the tissues with a larding needle. Be sure to save any excess fat. Fats are rich in calories and can be used for cooking.

The seasoning of meat can be done satisfactorily at any time. You'll probably find it more convenient to do it at the beginning of the cooking.

Pork, veal, mutton, and fowl must always be well-done. There are NO EXCEPTIONS to this rule. You may prepare beef rare, medium, or well done. A good meat thermometer will help you determine the various stages.

If carving is necessary, let the meat set for 30 minutes after it is done. Then begin carving—the job of cutting will be much easier. Carve the meat across the grain. Keep meat hot if it is to be served hot.

Basically, there are only two methods for cooking meat—by dry heat and by moist heat. Cooking with dry heat includes roasting, broiling, and griddle broiling. Cooking with moist heat includes braising and cooking in water.

HOW TO ROAST MEAT

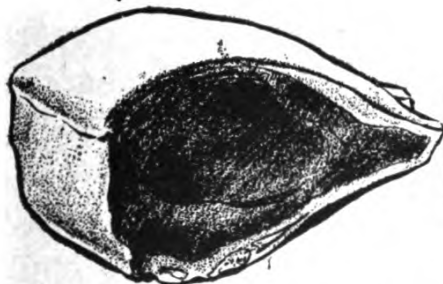
Roast meat in the ovens at a constant temperature of from 300° to 350° F. Don't let your oven temperature go higher. At these low temperatures, there will be relatively little shrinkage, the meat will be juicy, and it will be uniformly done throughout. In addition, you will not have to watch it constantly. Figure 148 shows you how a roast cooked at a low temperature compares with a similar roast cooked at a high temperature. Notice the excellent appearance of the roast cooked at a low temperature.

The amount of time that you keep the roast in the oven depends on the temperature of the oven, the

weight and shape of the roast, and the kind of meat—and whether you want the meat rare, medium, or well-done. Boneless meat must be roasted somewhat longer than meat containing bones. A small roast requires more minutes of roasting per pound than a large one. A lean roast gets done more quickly than a fat one. Look at the timetable for roasting on page 94 of your 1944 *Navy Cook Book*. It will help you decide how long to leave the meat in the oven. A meat thermometer, inserted in the center of the main muscle away from bones and fat will tell you when the roast is done. If the thermometer reads 140° F., the meat is rare; if it reads 160° F. it's medium; and at 170° F., it's well done.

COOKED AT

300° F.



COOKED AT

450° F.



Figure 148.—High temperature vs. low temperature roasting.

Searing the meat by subjecting it to a very high oven heat for a few minutes is not necessary. This method does NOT seal in the juices. Both roast and drippings will be sufficiently browned if a constant low temperature is used.

Always place the meat in an open roasting pan with the fat side up. Don't cover the pan at any time during the entire cooking period. A covered roast is not really roasted at all. It is braised, making it a pot roast. If a roasting-pan rack is available, use it. Then you will get an even browning over the entire surface.

Do not add liquid to the meat. Enough fat and juices will drip from the meat during the roasting period to keep it from burning or from sticking to the pan. As the meat roasts, the melted surface fat and juices penetrate the meat. Thus basting is done naturally without any periodic pouring of fat over the meat by hand.

HOW TO BROIL MEAT

Broil meat by cooking it directly over hot coals or directly under either a gas flame or an electric heating unit. Use thick slices of meat—1 to 2 inches thick. Lamb chops are an exception. They may be broiled if they are not less than $\frac{3}{4}$ of an inch thick. Don't try to broil thin steaks or chops as they will cook through completely before the outside is brown.

You can broil sliced liver—whether beef, veal, or pork. Other cuts of veal or pork must be cooked **WELL-DONE** and should **NEVER** be broiled.

Now for the actual broiling. Pre-heat the broiler to 550° F. After making several cuts in the fat edge of the meat to keep it from curling, lay the meat on the broiler rack. Put the broiler rack in position so as to leave from 2 to 3 inches of space between the meat and the heat unit. When the upper side of the meat is nicely browned, pull the rack out, salt the meat, and turn it over. (Lower side if meat is over hot coals.) Then broil the other side. Salt the meat when done and serve immediately.

HOW TO GRIDDLE BROIL

You can griddle-broil meats by cooking them on a heated metal surface. Place the meat on the **UN-GREASED** griddle. Cook it slowly. As the meat cooks, turn it frequently to develop the flavor and to obtain more even browning and cooking. Pour or scrape off the fat drippings as fast as they accumulate. Don't

add water and keep the meat uncovered. Season each side with salt and pepper as soon as it is browned.

HOW TO FRY MEAT

Properly fried meat has a crisp, brown outside covering and an excellent flavor. Do NOT fry meat that is more than $\frac{1}{2}$ inch thick.

Frying is much like griddle-broiling. The only difference is that the meat is cooked in a small amount of fat. This method of cooking is often called SAUTEING. Be sure the fat is hot before you place the meat in it—otherwise the meat will absorb much of the fat and will be unappetizing.

Deep-fat frying involves the complete covering of the meat with HOT fat. Meat prepared in this manner should be breaded.

The three types of meat most commonly braised are pot roasts, chops, and some of the tougher steaks. Make the tough steaks a bit more tender before braising by pounding them or by putting them through a cubing machine. Brown the meat thoroughly on all sides in a hot greased pan to develop flavor and color. When it is browned, add a SMALL amount of liquid to the pan. Put a tight-fitting cover over the pan to hold the moisture in. Keep the temperature at a point where the liquid will simmer but will not boil (185° to 200° F.). Cook the meat until it is tender. You may need to add a little liquid from time to time.

The drippings in the braising pan contain both flavor and food value—so save them for gravy or sauces. Serve gravy or sauce with braised meat.

HOW TO STEW MEAT

Cooking in water includes stewing and simmering. Small pieces of meat cooked in water are said to be STEWED—large pieces are said to be SIMMERED. In both cases the meat is just covered with water, which

is already heated to the simmering temperature (185° to 200° F.). This temperature is maintained constantly until the meat is done. It usually takes 1½ to 2 hours. Make your stews from the less tender cuts of beef, veal, or lamb—never use pork for a stew.

To get the added flavor of a brown stew, brown the pieces of meat before you add the water. Like soups, stews give you a chance for much variety. All sorts of herbs and spices can be used for seasoning. And vegetables, such as carrots, peas, onions, tomatoes, beans, and potatoes, can be added to give good combinations.

Be sure you select vegetables that differ in color, texture and flavor. You might use celery, green peppers, potatoes, and tomatoes in combination. Don't use combinations of potatoes, turnips, and rutabagas—they are too much alike for good results. Cut the vegetables into different sizes and shapes in order to provide additional contrasts.

Partially cook the meat before adding the vegetables—then the two will be done at the same time. You can provide additional variety by adding dumplings, baking powder biscuits, noodles, spaghetti, or macaroni. A meat pie is really a stew topped with a crust or with baking powder biscuits.

SIMMERING is used most frequently in preparing cured pork and beef cuts and in cooking variety meats, such as tongue and heart. Smoked ham that has been simmered is improved by covering it with a mixture of brown sugar and flour and putting it in the oven to brown.

SMOKED HAM

Smoked ham—whether commercial, domestic, or regular cure—has a low salt content. It is suitable for baking without parboiling or soaking beforehand. However, smoked hams need a bit of preparation before they are cooked.

If a smoked ham is frozen, defrost it completely before doing anything else. Then remove the hock at

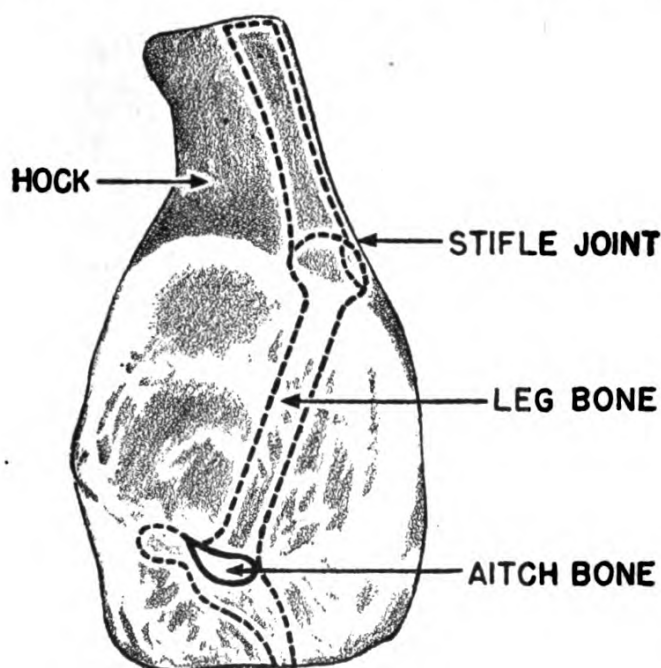


Figure 149.—Removing hock.

the stifle joint (figure 149). Leave as much meat as possible on the cushion section. Trim off the outside skin and remove any outside fat that is over $\frac{1}{2}$ inch thick. Take out the aitch bone (figure 150). Loosen

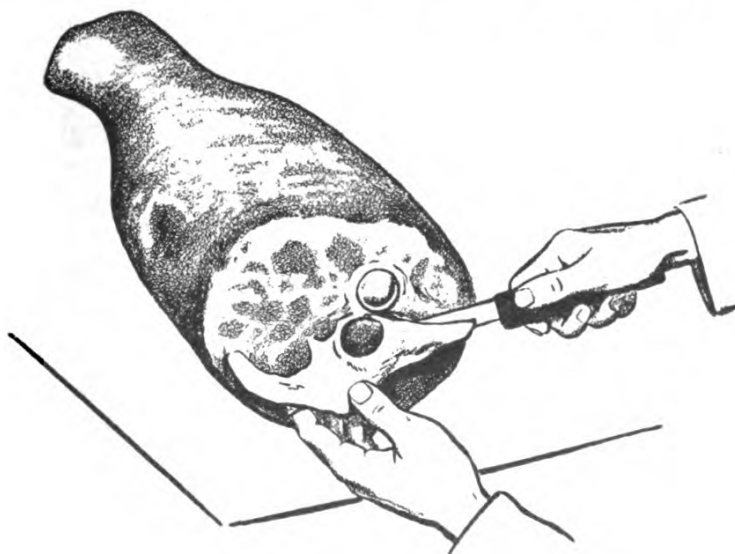


Figure 150.—Taking out aitch bone.

the meat around the knuckle ends of the leg (round) bone (figure 150).

All this cutting helps you in several ways. The hams require less space in the oven. They will be easier to carve. The shanks can be held back for seasoning purposes. The surplus fat can be rendered and used for frying and baking. Also you avoid the possibility of cooking spoiled hams because you get a check on the appearance of the interior of the ham around the leg bone.

THE OVERSEAS HAM

The overseas ham is a specially cured ham with a high salt content. If it has been out of cure for only a short time, it may be cooked whole. But before placing the ham in the oven, you should boil it in water for about an hour OR soak it overnight in cold water. (Throw this water away.) Either treatment will remove some of the salt content.

If the ham has been packed in salt for a month or longer, it is almost impossible to cook the ham whole with good results. Therefore, cut it into slices not over 1 inch thick. Boil these slices in water before you cook them in the oven.

POULTRY

You need remember only two general rules for cooking poultry.

First, use moderate heat (325° to 350° F.) so the meat will be juicy, tender, and evenly done throughout. This rule holds for birds of all ages and kinds from the spring chicken to the old hen.

Second, vary the cooking method according to the age and fatness of the bird. Broiling, frying, and roasting are best for young, tender, well-fatted birds. Braising in a covered pan makes lean young birds and old birds just past their prime both tender and savory.

Very old birds need long, slow cooking in water or steam to make them tender all through. Then they may be fricasseed, creamed, or curried.

Your *Navy Cook Book* gives you the details for many methods of cooking. But, before cooking, the poultry needs a bit of preparation.

PREPARING POULTRY FOR COOKING

Poultry received by the Navy has usually been killed and bled, then dressed and either chilled or frozen. Dressed means that the feathers only have been removed. A few things must be done before the bird is ready for cooking.

First of all, singe and wash it thoroughly. The singeing is done by holding the bird over a flame and turning the bird so that all parts of it come in contact with the flame. This singeing removes the fine hair and feathers which were not removed during the dressing process.

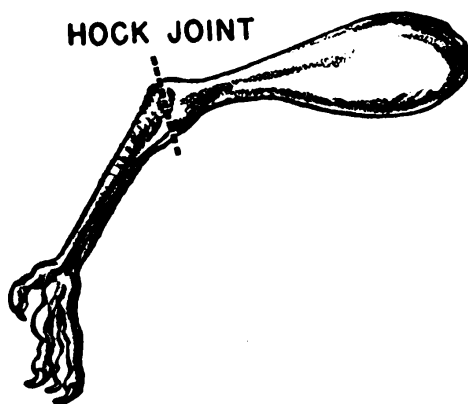


Figure 151.—Hock joint.

Chop off the bird's head with a cleaver or heavy butcher knife. Then, if it is chicken or duck, remove the feet by cutting through the hock joint (figure 151).

The legs of turkeys contain a number of heavy tendons that must also be removed. To do this, loosen the skin and the ligaments on each side of the hock joints with a knife. Then twist the feet until they are

free except for the tendons. Hang the turkey up by the feet. Pull downward on the turkey until the tendons pull out of the leg muscles. These tendons will come loose from the turkey and remain attached to the feet.



**SLIT FOR
REMOVAL OF CROP
AND GULLET**

Figure 152.—Slit in neck skin.

Now, for all poultry, make a slit in the neck skin all the way back to the shoulder (figure 152). Free the neck skin, gullet, windpipe, and crop from the neck.

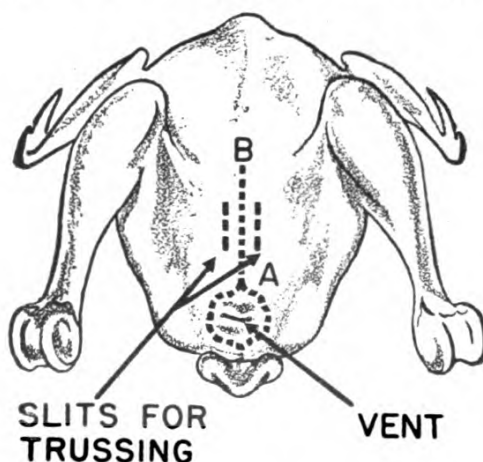


Figure 153.—Cuts to be made for drawing.

Pull the gullet, windpipe, and crop as far as possible from the body. Be careful not to tear the crop. Cut and remove.

Remove the neck from the body at the shoulder by cutting through the neck muscle. Twist to separate the vertebrae and pull the neck loose.

The insides must be removed next. This process is called DRAWING. Make a cut around the vent with a sharp pointed knife (figure 153). Then cut across the abdomen through the inside body fat (*A-B* in figure 153).

Don't cut any deeper than the fat. Insert your finger and loosen the intestines all around the inside of the body. Lift the lungs that are attached to the ribs. Remove the gizzard and all the other entrails at one time.

Cut out the oil sac—on the back just above the tail.

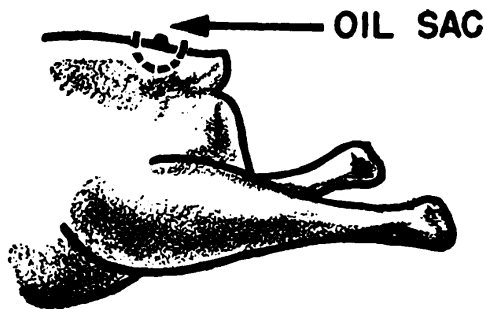


Figure 154.—Removing oil sac.

See figure 154. Wash the carcass inside and out. Do it quickly but thoroughly. Do not soak. Separate the giblets—gizzard, heart and liver—from the entrails. Always use the giblets—they have a good flavor as well as a high nutritive value.

PREPARING AND COOKING THE GIBLETS

Before the liver can be used, the bile sac must be cut away. This bile sac is found on the under side of the liver. You can recognize it by its greenish brown or yellow color. To remove the bile sac, slip your knife carefully under it and cut it away. At the same time cut away any part of the liver that may be stained by contact with the bile sac. Whatever you do—don't

let the sac break. If this should happen accidentally, throw away any part of the chicken on which the bile falls.

Cut the fat away from the gizzard. Then cut into one of the gizzard's thick sides as far as the inner sac—don't cut into this sac. Put your thumbs on either side of this cut and pull the sides of the gizzard away until the inner sac drops out. Throw this sac away.

Slit the heart open and remove the blood vessels and any blood clots that might be present. Then wash all the giblets in cold water.

Now for the cooking. Place the giblets in a kettle containing just enough salted water to cover them. Let the giblets simmer until they become tender. This takes from 1 to 1½ hours for chicken giblets and from 2 to 3 hours for turkey giblets. Then you can chop or grind them and add them to the gravy or serve them just as they are.

Use the bones and feet for making soup stock. Be sure to skin the feet before using.

HOW TO TRUSS FOR ROASTING

Poultry to be roasted requires trussing for best results. Cut the skin at the abdomen above the tail, parallel to the cut made for drawing. Look again at figure 153. Put the drumstick ends through the slits so that the ends extend underneath the strip of skin. In this position the legs are held close to the body during cooking. Draw the neck skin over the front opening and onto the back. Fold the wings into place.

HOW TO PREPARE BROILERS

Broilers require a little different preparation. After singeing and washing, lay the bird on its side. Cut off the tail. Cut at an angle so that both the oil sac and the vent are included with the tail. Then make

cuts from the neck down on both sides of the backbone (figure 155).

Grab the head and rip out the back, neck, and

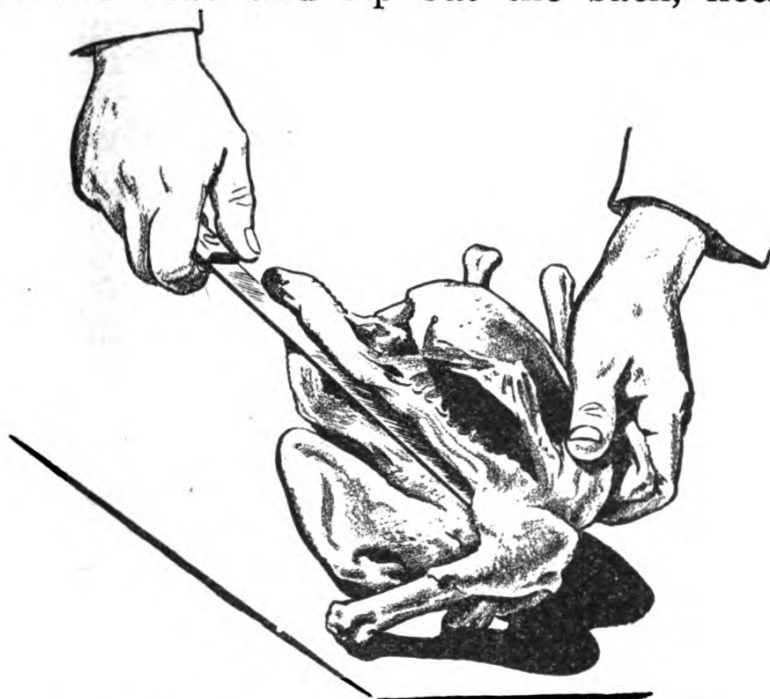


Figure 155.—Cutting on both sides of backbone.

backbone in one piece. Save the neck and backbone for soup. Now, chop off the head. Open the bird and remove the entrails. Be sure to lift out the lungs.

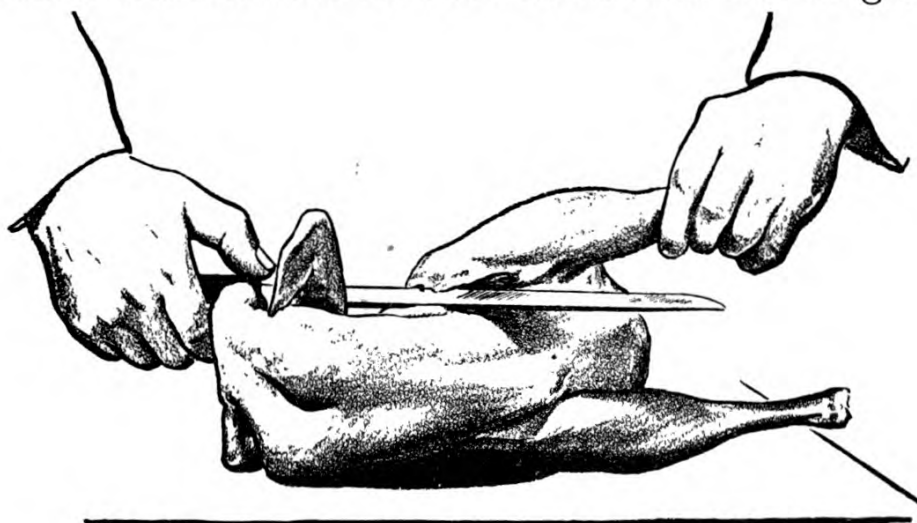


Figure 156.—Cutting off the legs.

Flatten the bird by breaking or chopping the wish-bone. Snap the joints to keep the bird flattened during

the cooking. Separate the giblets from the entrails. Be sure to cut out the bile sac from the liver and throw the bile sac away.

Finally, wash the bird quickly but thoroughly. Do not soak.

HOW TO DISJOINT FRYERS AND FOWLS

Cut fryers and fowls into 12 pieces. First of all, remove each wing at the joint next to the body. Disjoint the legs at the back (figure 156) and cut each leg at the knee so as to form two pieces.

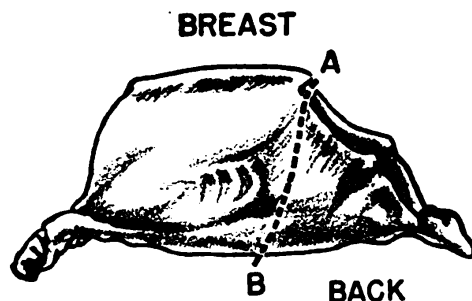


Figure 157.—Cut to separate back from breast.

Make an incision through the thin muscle tissue at the rear of the breast or "knee" bone (*A* in figure 157).

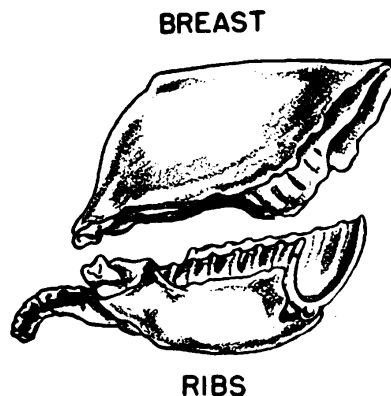


Figure 158.—Breast separated from ribs.

Pass the knife forward and downward to the juncture of the last rib and back (*A-B* in figure 157).

Repeat this cut on the opposite side. Bend the back and break it at the cut just made. Remove the intestine, giblets, and lungs.

Separate the breast from the part of the back containing the ribs as shown in figure 158. Then cut the breast into three pieces as indicated by the dotted lines in figure 159. Make the cut from *A* to *B* first.

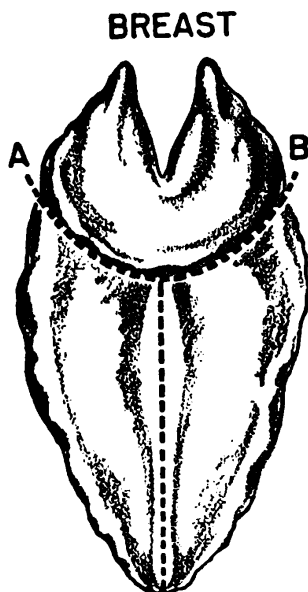


Figure 159.—Cutting the breast.

You now should have the 12 pieces shown in figure 160. You also have the giblets, of course.

FISH

Fish is an excellent source of protein. As much as $\frac{1}{2}$ of the total unit of protein needed by a sailor in a day may be furnished by one meal of fish. Yet, ordinarily, the men don't go for the fish as they do for good steaks. You'll need to prepare fish carefully and well.

As a rule, fat fish are best for baking and broiling. The lean fish are most suitable for boiling, steaming, and chowders. Both fat and lean fish can be fried. Your *Navy Cook Book* gives you the details for handling fish by the various methods.

HOW TO PREPARE FISH

Fish need to be finned. To do this, cut into the flesh of the fish at each side of the base of the larger

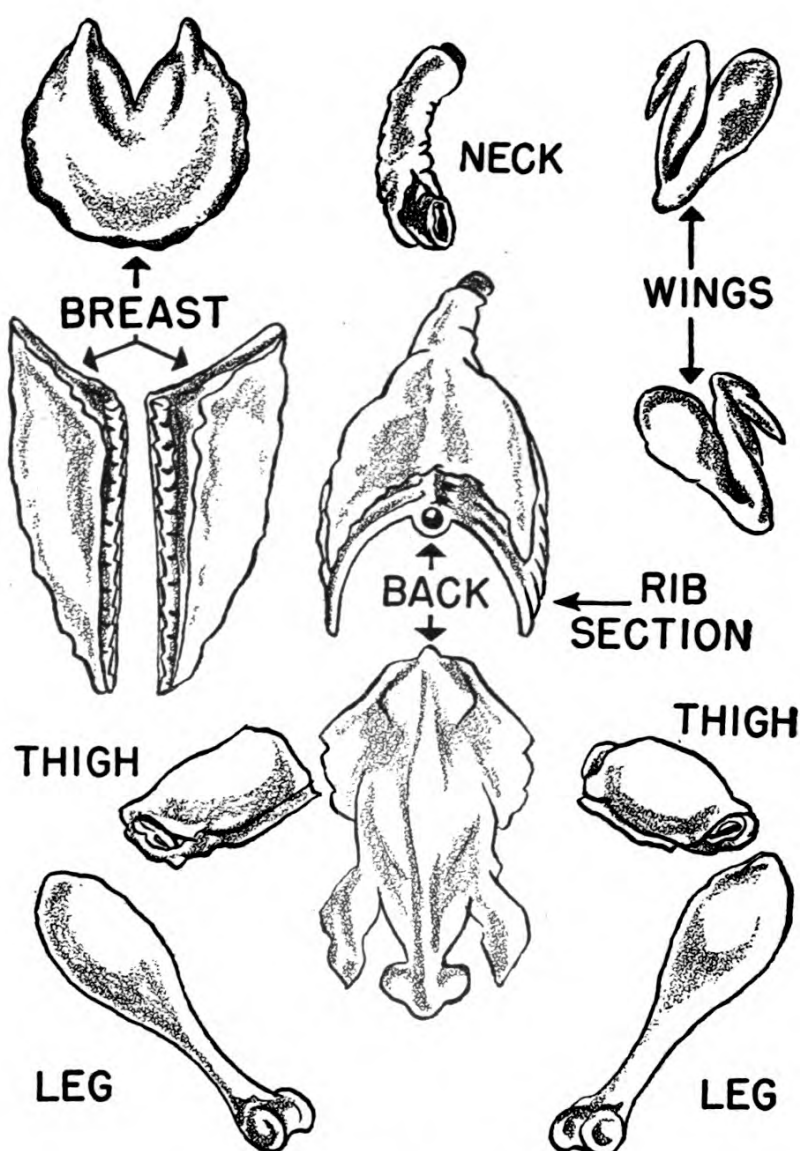


Figure 160.—Chicken cut into pieces for frying.

fins. Grab the rear part of the fin and give a sudden jerk forward toward the head of the fish. This should remove both fin bones and fins.

To fillet or bone a fish, cut down the flesh just behind the head until the knife reaches the backbone. Then turn the knife flat and cut the flesh along the backbone to the tail (figure 161). Lift off the whole side of the fish in one piece. Turn the fish over and loosen the meat from the other side in the same way. Take out any small bones that may remain.

Remove the skin by first dipping the fish in boiling water for a few minutes. Place the fillet with the

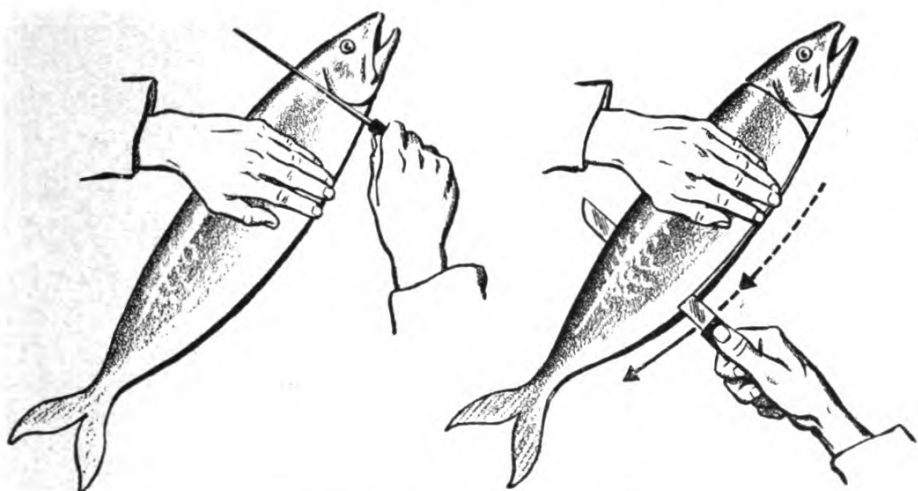


Figure 161.—Filleting a fish.

skin side down and loosen the skin from the meat by holding the knife flat against the skin. Start at either end of the fillet.

VEGETABLES

Vegetables add to a meal in many ways. They make for variety and interest. They add color and flavor. Best of all, they increase the nutritive value of the meal. But—all of these values may be lost by careless handling and improper cooking.

Vegetables are bought by the Navy in the following forms—canned, dehydrated, quick-frozen, and fresh. The canned vegetables have been cooked in the container and need only to be brought to boiling temperature just before serving. Avoid overcooking as you would smallpox. Retain the liquid from canned vegetables for use in soups, sauces, and gravies.

Most DEHYDRATED vegetables need special treatment. Your cookbook gives you individual recipes. With few exceptions, you prepare them like this: Soak the measured quantity of the vegetable in the proper amount of water for the length of time given in the recipe. Use lukewarm water. Stir thoroughly

every 10 minutes to make sure the water is properly absorbed by the vegetable. During this soaking period the dehydrated vegetables are said to be RECONSTITUTED. After this soaking period, add salt and heat slowly to the boiling temperature. Let the vegetables simmer only until they are tender. Then season and serve as you would a cooked fresh vegetable. When vegetables are dehydrated they lose some of their flavor and odor. Use additional seasonings, therefore, to help provide flavor.

QUICK-FROZEN vegetables have the appearance and flavor of fresh vegetables. In addition, they are easier to handle than fresh vegetables because frozen vegetables have already been thoroughly cleaned and trimmed. Unless defrosting is necessary, they can be cooked just like fresh vegetables. Follow the directions given on the containers or on page 248 of the *Navy Cook Book*.

SELECTING VEGETABLES FOR COOKING

Either select vegetables about equal in size or cut them into pieces of equal size. Then all the vegetables will be uniformly cooked in the same length of time.

PREPARING VEGETABLES FOR COOKING

Cook vegetables with the peel on when possible—especially potatoes. If you must peel potatoes, do it very carefully so as to procure THIN peelings—much of the food value lies close to the skin.

Wash all vegetables thoroughly. Use a vegetable brush to clean celery, carrots, beets, and potatoes. Soak asparagus, broccoli, cauliflower, brussels sprouts, and French artichokes in salted, cold water (1 tablespoon of salt per quart) about 30 to 60 minutes. Such soaking eliminates worms and insects. Wash spinach, kale, beet tops, and similar greens

in cold water several times to remove dirt and sand particles. Lift the greens from the water instead of "running the water off" the greens.

Vegetables should be kept in a cool storage room until ready to prepare for cooking. If the vegetables get wilted they can be crisped and freshened by placing them in ice-cold water or between layers of crushed ice. When freshened, they should be covered with a clean damp cloth and placed in a cool storage room until ready to use.

Keep the time between preparation and cooking as short as possible. Valuable vitamins are lost when vegetables are soaked too long or are allowed to remain in warm temperatures for several hours.

NOW YOU'RE COOKING

Cook only a small amount of vegetables at a time. Use as little water as possible. Have the water salted and boiling before adding the vegetables. Do NOT add soda to the water—soda destroys vitamins and makes the vegetables mushy. Cook them only until they are tender. Over-cooked vegetables are not as attractive, palatable, or nutritious as those cooked for the proper length of time.

Serve the vegetables as soon as they are done. Long standing on a steam table causes loss of both flavor and vitamins. Add melted butter or sauces just before serving. Taste the finished product—if necessary add salt or extra seasoning. Avoid over seasoning.

THE NAVY COOK BOOK WAY

The *Fresh Vegetable Guide* on page 244 of your cook book indicates the amounts of the common fresh vegetables needed for 100 portions. Weights of portions are for COOKED vegetables. Weights of servings of baked vegetables served whole, such as potatoes,

depend upon the size of the individual vegetables.

Page 245 of the cook book also gives you a chart showing the weights and yields of canned vegetables. And a time table for cooking fresh vegetables is shown on page 246. Make use of these.

FRUITS

“An apple a day keeps the doctor away.” This MAY OR MAY NOT be true. But fruit—not just apples—should appear on the menu every day. They add color, variety, food value, and a refreshing flavor to any meal. They fit into all three of your daily meals. At breakfast fruits can be served alone or in combination with cereal. For dinner or supper they may be used as a first course or as a salad or dessert. Combining two or three cooked fruits makes a pleasing light dessert for the main meal.

Fruits are supplied to the Navy in the fresh state or quick-frozen, canned, or dried. Fresh and canned fruits may be combined to vary the flavor and texture.

At breakfast, fruit juices may be served as the first course; and at dinner or supper as the main beverage or in place of soup.

HOW TO PREPARE FRUITS

Prepare the fruits just before you are ready to use them. Even then, some fruits may discolor before they can be served. Fully ripe fruit does not discolor as rapidly as under-ripe fruit.

To obtain fully ripe bananas, hold the green-tipped or all-yellow fruit at room temperature—68° F. to 70° F.—until the skins are well flecked with brown.

Discoloration in apples and pears can be avoided by placing the cut pieces in a solution of salt and water for a few minutes just before using. Allow 1 teaspoon of salt to 1 quart of cold water. To avoid discoloration, sprinkle avocados, bananas, and peaches

with fresh or canned grapefruit juice, lemon or orange juice, or canned pineapple juice. Dipping the cut pieces into any of these juices will give you the same effect.

SALADS

Is a salad just a side dish? Absolutely not. Salads have an important place on the menu. They add something both nutritious and refreshing to the dinner or supper meal.

Fruit and vegetable salads are the most popular. They are also one of the best means of introducing valuable vitamins, necessary minerals—and color—into the meal.

Best of all—salads can be made quickly and easily if a few simple rules are followed.

THE SALAD GREENS

Select your salad greens carefully. You have a wide choice of greens suitable for a salad foundation—lettuce, endive, romaine, escarole, watercress, young spinach, and cabbage. These may also be used as one of the main ingredients of the salad itself. Parsley, watercress, and the inner tender leaves of curly endive are good for a garnish.

Sort, trim, wash, and crisp the greens before making the salad. Wash them carefully to free them of sand and earth particles. Drain well. Cut the lettuce and cabbage into strips or pieces—or shred them when they are to be used as one of the main ingredients.

Place the prepared greens in pans. Cover them with wax-paper, if available, then with a clean, damp cloth. Put them in a refrigerator to chill and crisp before using. They should be free of excess water. And they should be one of the very last parts of the meal to be prepared.

FRUITS AND VEGETABLES FOR THE SALAD

Select fruits and vegetables with care. Wash them thoroughly. Trim and peel if necessary. Cut them into uniform sizes. Cook those vegetables which need cooking. Cover the prepared material and place in the refrigerator to be chilled. Do this before combining with salad greens and dressing.

MIXING THE SALAD

Mix the salad carefully **JUST BEFORE SERVING**. Combine the prepared, chilled ingredients in small amounts at a time. Mix or toss them lightly together. Use a large fork to thoroughly distribute the ingredients and dressing.

MIX IT UP

The salad dressing is as important as the salad itself. Each type dressing can take on a new flavor by the addition of various seasonings and herbs. That's one way of getting variety.

As a rule, add the dressing to a fruit or raw vegetable salad the very last thing—not more than 5 minutes before you are ready to serve the salad. Follow this rule strictly. However, exceptions may be made for meat, fish, cooked vegetables, and potato salad. For these salads, the dressing should be added about 1 hour in advance of serving, and the salad mixture then placed in a refrigerator to be chilled. The flavors of meat, fish, and potato salads will be considerably improved by following this procedure.

RELISHES

Relishes are good to use in place of or with a salad. Raw carrots sliced lengthwise, celery, radishes, olives, and pickles make excellent relishes. Some of

these have high food value as well. They all increase the attractiveness of a meal.

DESSERTS

A good dessert rounds out the meal and makes up for weaknesses you have have in other parts of the meal. Serve a light dessert with a heavy meal and a heavy dessert with a light meal. Sweet, rich desserts go well with a light evening meal.

Good cakes and pies are always welcomed by the men. They are discussed in Chapter 12 of this book. Ice cream and sherbert are especially good during warm weather. Your *Navy Cook Book* gives you recipes for these. Fruits served raw or in gelatin combinations are always suitable.

A great variety of handy desserts can be made from basic sweet dough.

NAVY COFFEE—THE PEP DRINK

NAVY COFFEE, good old "Joe," is famous. Follow a few simple rules and you won't have any trouble making excellent coffee.

Coffee is delicate and perishable. It loses its flavor and aroma rapidly when exposed to the air after it is ground. Therefore, grind up the coffee beans only as you need the coffee. If coffee deliveries are made in airtight containers, see that these containers are kept tightly covered.

When making coffee, follow the recipes given in the *Navy Cook Book*. Always measure both the coffee and water. Use fresh coffee at all times. Keep the coffee covered while it is brewing. Don't allow the coffee to remain in contact with the boiling water as the flavor and aroma boil off. Remove the grounds as soon as the coffee is made as seepage from these grounds ruin the flavor.

Most important of all, keep the COFFEE-MAKING

EQUIPMENT absolutely clean. Wash the urn with clear, hot water after each use. Twice every 24 hours wash it with hot water and urn powder. Never use soap or soap powder. Rinse thoroughly with clear water.

Remove the urn faucet once a day. Scrub it with hot water, washing soda, and a brush. Use 1 tablespoon of washing soda for each quart of water. Be sure to rinse thoroughly.

Clean the glass gages at least twice a week with a brush, hot water, and washing soda.

Rinse the urn bag in clear, cold water after each use. When not in use, keep the bag in cold water. Renew the cloth bag often.

GLASS COFFEE MAKERS

The bowls of glass coffee makers should be washed in clear, hot water. Rinse the filter cloth in cold water. Renew this cloth often. Scald all new filter cloths before using. Never allow them to dry. Keep them submerged in clear, cold water.

Be sure that the outside of the glass bowls are thoroughly dry before you place them over the heat. Never allow an empty bowl to remain over the heat. When using the coffee maker on an oil range, place it over a low flame.

After removing the glass coffee maker from the heating unit, always put it on a rubber, asbestos, or cork mat. The glass may break if you place the hot container on a cold surface.

OTHER DRINKS

Make TEA just before you are ready to serve it. Be sure you use fresh water. Put the tea leaves in water that is just below the boiling point. NEVER boil after adding tea leaves. Use the tea leaves only once.

When preparing iced tea, sweeten the tea while it is still hot so the sugar will dissolve readily. Cool with cracked ice. Make tea to be iced a little stronger than hot tea as the ice weakens the tea.

LEMONADE can be made with lemons or with the Navy issue of synthetic lemon juice powder. This synthetic powder will make six times as much lemonade as the straight lemon juice powder. Follow your *Navy Cook Book* recipe.

CHOCOLATE MILK can be made by adding chocolate sirup to milk which has been heated to the boiling temperature. The *Navy Cook Book* tells you how to make the sirup.

COCOA is made from a paste of cocoa, sugar, and salt mixed with milk that has been heated to the boiling temperature. Stir the paste into the milk and beat with a wire whip.

GRAVIES AND SAUCES

Gravies and sauces are used to add flavor to the meal and to provide a contrasting texture. They also add variety.

Use cream sauces for vegetables and either cream sauces or gravies with meats.

To make gravy, thicken the juice of roasted meats. Meat stock, prepared beforehand, may be used in place of or as part of this juice. Season properly to fit the type of meat served.

Cream sauce is made by mixing flour and butter or other fat and adding hot milk. Blend the flour and butter carefully to a smooth paste. Stir it gradually into the hot milk in order to avoid lumps.

SANDWICHES

Sandwiches provide good food in convenient form for use during an emergency. They can also be used as the main item in a meal when served with hot vegetables, a salad, and dessert.

Have plenty of work space and all the materials ready before you begin to make the sandwiches. Use day old bread if possible. Soften the butter by placing it in a warm place. Then whip it until it becomes creamy. This enables you to spread it easily. Spread the butter from the corners and edges toward the center. The butter will prevent the sandwich filling from soaking into the bread.

Make the sandwich fillings just before using, if possible. Fillings made with meat, egg or fish spoil fast if allowed to remain in a warm temperature. When it is necessary to keep sandwiches for 1 to 2 hours before using, place them in a refrigerator immediately after making. Keep them there until you are ready to use them.

BREAKFAST CEREALS

Breakfast cereals put the zip into breakfast. In addition to furnishing food energy, the whole grain cereals and restored breakfast foods supply valuable vitamins, minerals, and protein. When served with milk or milk and fruit, they are even better. There are three main types of breakfast cereals—regular, quick-cooking, and prepared.

The regular cereals include rolled oats, corn meal, farina, and cracked whole wheat. These require complete cooking. This takes from 20 minutes to an hour. See page 24 of the *Navy Cook Book*. These cereals are served hot.

The quick-cooking cereals are partly cooked before packaging. Rolled oats and wheat cereals are included here. Only 5 to 10 minutes of cooking is required.

Either the regular or quick-cooking cereals may be used in meat loaves or added to soups. Cooked cereals such as corn meal or farina may be placed in pans and chilled. After that they may be sliced and fried and served with sirup, powdered sugar, or fruit sauce.

The prepared, ready-to-eat cereals are the packaged, dry kind. They are made from wheat, corn, rice, barley, oats, and rye. They are fully cooked and flavored. You can make dry cereals more appetizing by removing them from the packages and reheating them. Dump them into baking pans and place in a slow oven (325° F.) for about 5 minutes.

EGGS

Ham and fresh eggs, bacon and fresh eggs are welcomed wholeheartedly by the men. And the eggs are especially good suppliers of protein and minerals. Eggs, like every other food must be prepared right if best results are to be expected. Your *Navy Cook Book* tells you how to prepare them in many different ways.

When several eggs are to be stirred, mixed or beaten together, they should be broken into a small bowl first one at a time. This will give you a chance to destroy any bad egg that turns up without spoiling any others.

Scrambling powdered eggs so that the men will like them is your hardest job. Follow the recipe carefully. If possible, prepare no more than 25 portions at one time. Prepare the eggs less than 10 minutes before serving. They toughen up if they are allowed to stand around. Always reconstitute the powdered eggs carefully with cool water. After reconstitution, use them within 1 hour. Try adding diced, cooked bacon or ham, sausages, luncheon meat, or cheese in order to improve the flavor.



CHAPTER II

THE ARITHMETIC OF RECIPES

A BIT OF FIGURING

The recipes in the *Navy Cook Book* are set up for 100 men. But, you don't usually have exactly 100 men to feed. How then are you going to use these recipes? A bit of figuring is necessary. There are at least two good reasons why guess work won't do.

The cook book recipes have been carefully made out to give the best results possible. If you change the proportions of the ingredients, you can't expect to get good results. Also, the preparation of too little food leaves the men hungry and dissatisfied. You can't get away with that for very long. On the other hand, the preparation of too much food results in waste. Over a period of time this waste may become tremendous. And, using spoiled left-over food is worse than throwing food away—food poisoning may result.

UNITS OF MEASURE

The most common units of measure used in cooking are gallons, quarts, pints, cups, tablespoons, tea-

spoons, pounds, and ounces. Lots of times you'll find the numbers easier to handle if you change the given unit to the next smaller unit. For example, change gallons to quarts, pounds to ounces. This is easily done. To change—

	MULTIPLY BY
Gallons to quarts.....	4
Quarts to pints.....	2
Pints to cups.....	2
Cups to tablespoons.....	16
Tablespoons to teaspoons.....	3
Pounds to ounces.....	16

Take a few minutes to memorize these figures so you won't have to turn to this table every time you need to reduce a unit of measure.

Now follow through some examples and you'll see exactly what needs to be done. You'll find that the work is very much like what you had to do when figuring how much to ORDER for the galley. See pages 50 to 53 of this book.

The Navy Cook Book recipe for vegetable soup calls for 5 gallons of beef stock for 100 portions. For 25 portions, use $\frac{1}{4}$ of the recipe, for 50 portions, use $\frac{1}{2}$ of the recipe, and for 75 portions, use $\frac{3}{4}$ of the recipe. These fractions are easy to handle. But suppose you're feeding 17 men. What then?

VEGETABLE SOUP FOR 17 MEN

First of all, change the gallons to quarts.

$$5 \times 4 = 20 \text{ quarts.}$$

Then multiply the 20 by 17, the number of portions you need, like this—

$$20 \times 17 = 340$$

Place a decimal point in front of the SECOND number from the RIGHT and you have 3.40 quarts—the

amount you need for 17 men. Three quarts is easy to measure, but the .40 is not so easy. The following table will help you change the .40 and other decimals to fractional parts you can EASILY measure.

.1 to .3 — $\frac{1}{4}$

.3 to .7 — $\frac{1}{2}$

.7 to .9 — $\frac{3}{4}$

.9 to 1.1 — 1

So—you'll measure out $3\frac{1}{2}$ quarts of soup stock.

SCRAMBLED EGGS FOR 63 MEN

Here's another problem. Suppose you needed to prepare scrambled eggs for 63 men.

The recipe for scrambled eggs is given on page 62 of your 1944 *Navy Cook Book*. How much of each of the ingredients are you going to need?

Eggs—The 100 portion recipe calls for 240 eggs.

You have only 63 men so you multiply—

$$240 \times 63 = 15,120$$

Put the decimal point in front of the last two numbers. This gives you 151.20 eggs. You can't take a fractional part of an egg. So use 151 eggs.

Certainly you aren't going to count out 151 eggs, one by one. That's a waste of time. A case of eggs contains 30 dozen eggs—15 dozen on each side. Each side has 5 layers, 3 dozen to the layer. Divide the 151 by 12 to find the number of dozen you want.

$$151 \div 12 = 12 \text{ dozen plus 7 eggs.}$$

You'll need 4 layers to get the 12 dozen. Then count out 7 more eggs from another layer to get the number you need.

SALT—Six tablespoons of salt is specified in the recipe.

$$6 \times 63 = 378$$

Put in the decimal point to get 3.78. So $3\frac{3}{4}$ tablespoons of salt will be needed.

PEPPER—Only $\frac{3}{4}$ of a tablespoon of pepper is required for 100 portions.

$$\frac{3}{4} \times 63 = 47\frac{1}{4}, \text{ say } 47$$

Put in the decimal point and you have .47. So you'll need $\frac{1}{2}$ tablespoon of pepper.

MILK—The Cook Book recipe calls for $2\frac{1}{2}$ gallons of milk. Change this amount to quarts.

$$2\frac{1}{2} \times 4 = 10 \text{ quarts.}$$

Now, multiply by 63.

$$10 \times 63 = 630$$

Put in the decimal point and you have 6.30. You'll need $6\frac{1}{2}$ quarts of milk.

BUTTER OR OTHER FAT, MELTED—One hundred portions require 2 pounds and 8 ounces of butter or other fat. Change the pounds to ounces—like this—

$$2 \times 16 = 32$$

Add the 8 ounces—

$$32 + 8 = 40 \text{ ounces.}$$

Multiply by the number of men—

$$40 \times 63 = 2520$$

Put in the decimal point and you have 25.20 ounces. So, $25\frac{1}{4}$ ounces or 1 pound and $9\frac{1}{4}$ ounces of butter is needed.

ON YOUR OWN

Now work out the scrambled egg recipe for a general mess feeding 83 men. Remember the steps—

1. Reduce the unit of measure used in the recipe to the next smaller unit whenever the original unit is too large for convenient measurements.
2. If the number of men to be fed is a simple fractional part of 100, multiply this fraction by the recipe amounts. If the number is not a simple fractional part of 100, do this—

- (a) Multiply the quantity required for 100 portions by the number of men.
- (b) Place a decimal point in front of the second number from the right.
- (c) Change any decimals you may have in this answer to a fraction or a whole number— $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ or 1.

Here's the way your recipe should finally line up—

SCRAMBLED EGGS

INGREDIENTS	83 PORTIONS
Eggs, whole, slightly beaten	199 eggs (5 layers plus 19 eggs)
Salt	5 tablespoons
Pepper	$\frac{1}{2}$ tablespoon
Milk, liquid	$8\frac{1}{4}$ quarts
Butter or other fat, melted	$33\frac{1}{4}$ ounces (2 pounds $1\frac{1}{4}$ ounces)

Try the same recipe for 42 men. Can you get these amounts?

SCRAMBLED EGGS

INGREDIENTS	42 PORTIONS
Eggs, whole, slightly beaten.....	101 eggs (2 layers plus 29 eggs)
Salt	2½ tablespoons
Pepper.....	1/3 tablespoon, or 1 teaspoon
Milk, liquid.....	4¼ quarts
Butter or other fat, melted.....	16¾ ounces (1 pound, ¾ of an ounce)

MESSES FEEDING 500—1,000 MEN

So far, you have seen how to handle recipes when you have less than 500 men in your mess. But many Navy messes serve more than 500 men. Suppose you needed to serve French pot roast to 525 men.

Your Navy Cook Book recipe specifies that 40 pounds of boneless beef should be used for 100 portions.

So multiply—

$$40 \times 525 = 21,000$$

Place the decimal point, and you get 210.00 pounds. But remember that for messes between 500 and 1,000 the amount thus found should be reduced by 5 percent. Like this—

$$210 \times .05 = 10.5$$

Then subtract—

$$\begin{array}{r} 210 \\ -10.5 \\ \hline 199.5 \end{array}$$

So you'll need 200 pounds of boneless beef.

MESSES FEEDING OVER 1,000 MEN

What would you do if you had to provide French pot roast for 1,236 men? In this case multiply the

amount needed for 100 portions (40 pounds) by the number of men to be fed.

$$40 \times 1,236 = 49,440$$

Put in the decimal point and you get 494.40 pounds.

But for messes over 1,000, reduce the amount thus found by 10 percent. Like this—

$$494.40 \times .10 = 49.44$$

And subtract—

$$\begin{array}{r} 494.40 \\ -49.44 \\ \hline 444.96 \end{array}$$

So, you'll need 445 pounds of boneless beef.

ON YOUR OWN AGAIN

Now, how much boneless beef do you need for making French pot roast for 727 men? 1,612 men? Your answers should be $276\frac{1}{4}$ pounds and $580\frac{1}{4}$ pounds respectively.



CHAPTER 12

BAKING

DO GOOD WORK

Sure you want to be a good cook. But, you'll need to know how to do a good job of baking, also. In fact, on a small ship, you may have to do all the cooking and baking.

Some people have the idea that good baking must be complicated. Just the opposite is true.

WHAT GOES INTO GOOD NAVY BREAD

Good Navy bread is made from just seven major ingredients—yeast, water, sugar, salt, milk, flour, and shortening (figure 162).

Your *Navy Cook Book* gives you two formulas for white bread—an average formula and a rich formula. The rich formula requires more yeast, sugar, milk, and shortening, and less water and salt. Use the rich formula when you're making bread for special occasions. In addition the cook book includes

balanced formulas for rye bread, whole wheat bread, field bread, and rolls.

WHAT BREAD INGREDIENTS DO

What do the ingredients do, once they're mixed into the bread dough?

The YEAST causes the dough to become light and porous. The process of lightening the dough is called

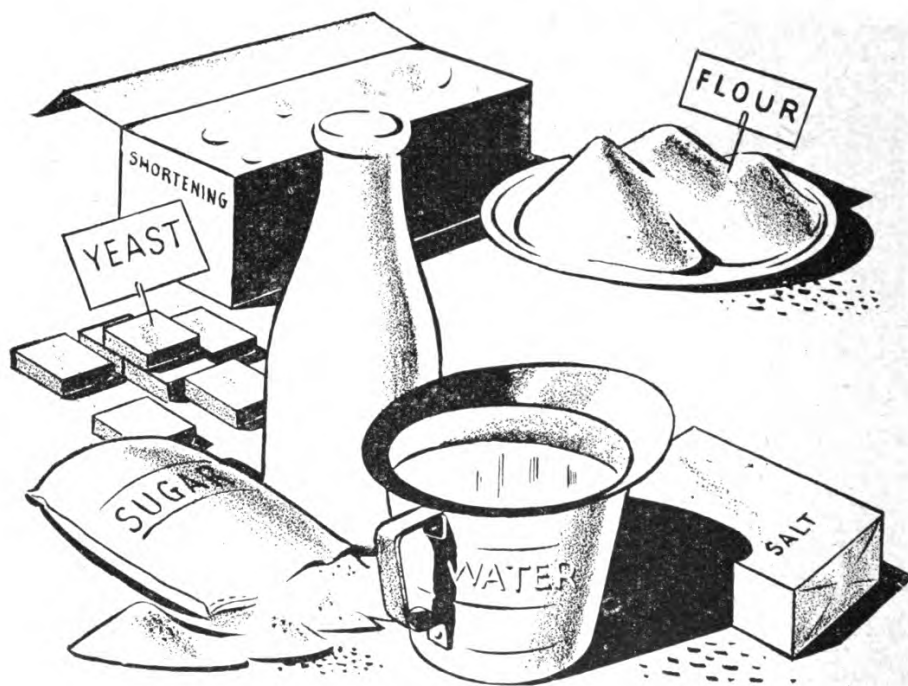


Figure 162.—Ingredients of bread.

fermentation. Fermentation is caused by the yeast feeding on the other ingredients in the dough. As the feeding goes on, carbon dioxide gas is formed. This gas causes the dough to rise (swell up) and thus makes it light and porous. Yeast itself is made up of very small living plants—so small they can't be seen with the naked eye. Figure 163 shows how these plants look under a microscope.

The SALT helps control the fermentation. Too much fermentation is just as bad as too little. The salt also improves the flavor and texture of the bread.

The SUGAR furnishes most of the food for the yeast. It makes the bread tender and has much to do with the development of a good texture. The sugar also sweetens the bread and helps give color to the crust. Sugar may be supplied in the form of granulated sugar, confectioner's sugar, brown sugar, or sugar sirup. Sugar sirups include malt, molasses, honey, corn sirup, and invert sirup. Turn to page 316 of your 1944 *Navy Cook Book* if you wish to know more about these sugars.

The FLOUR absorbs the water and thus provides the supporting framework for all the other ingre-

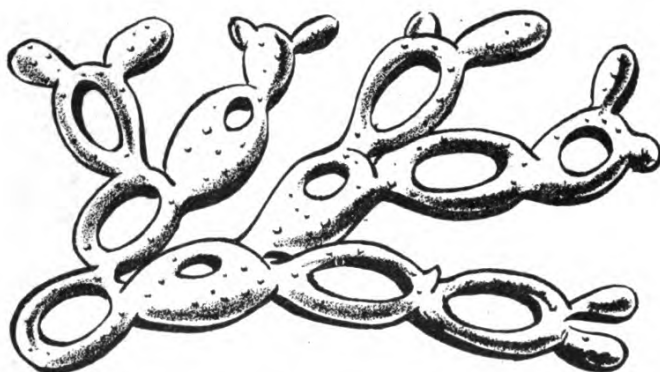


Figure 163.—Yeast plants.

dients. The hard wheat flour usually used for bread has high protein food value. When enriched, it also furnishes valuable vitamins and minerals.

SHORTENING makes the bread tender and improves its eating and keeping qualities. Without shortening, the grain and texture of the bread would be poor. The shortening also adds food value. It furnishes more calories per pound than any of the other ingredients.

MILK adds moisture, richness, and food value. The milk is also largely responsible for a good, golden brown crust.

WATER provides the additional moisture needed to form a dough that is easy to handle.

MIXING THEM UP

The purpose of mixing is to make possible an intimate and uniform mixture of the ingredients into a smooth dough. It brings about a complete wetting of the flour and distributes the yeast cells all through the dough.

There are two standard methods of mixing dough—the straight-dough method and the sponge-dough method. The *Navy Cook Book* emphasizes the straight-dough method. If this doesn't work out very well for you, try the sponge-dough method. You'll find a short explanation of it on page 320 of your 1944 *Navy Cook Book*.

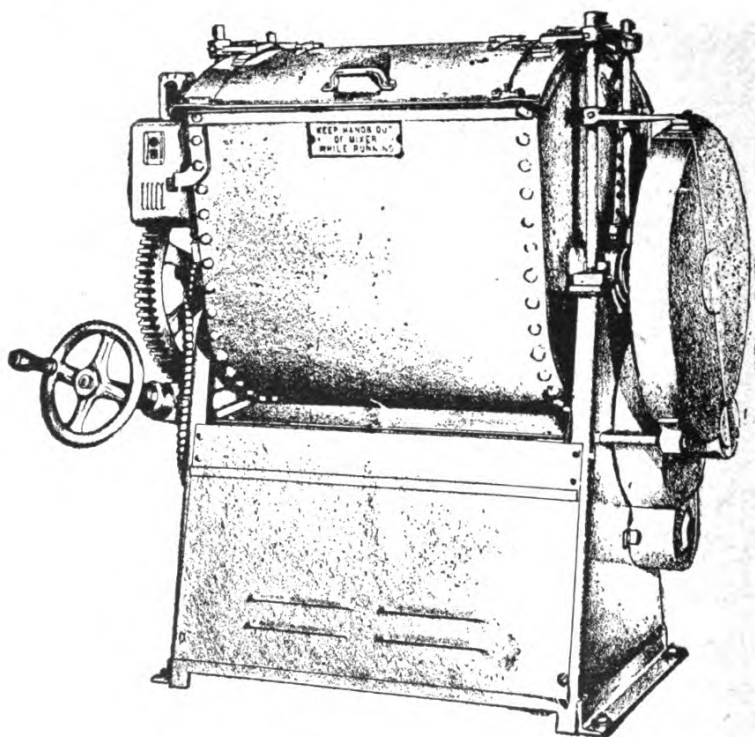


Figure 164.—Dough mixing machine.

Here's how the straight-dough method works—Dissolve the yeast completely in a little lukewarm water. Ordinary tap water is usually all right. Handling the yeast in this way makes it spread evenly through the dough.

Mix this yeast solution with the salt, sugar, milk, and the rest of the water. Only the yeast need be thoroughly dissolved at this time.

Then add the flour and mix well in the dough mixing machine (figure 164).

Add the shortening next and mix well for about 10 minutes. Keep the temperature of the dough at about 80° F. Lower temperatures slow up the action of the yeast. Higher temperatures make the dough difficult to handle and provide good conditions for a bacterial growth known as ROPE.

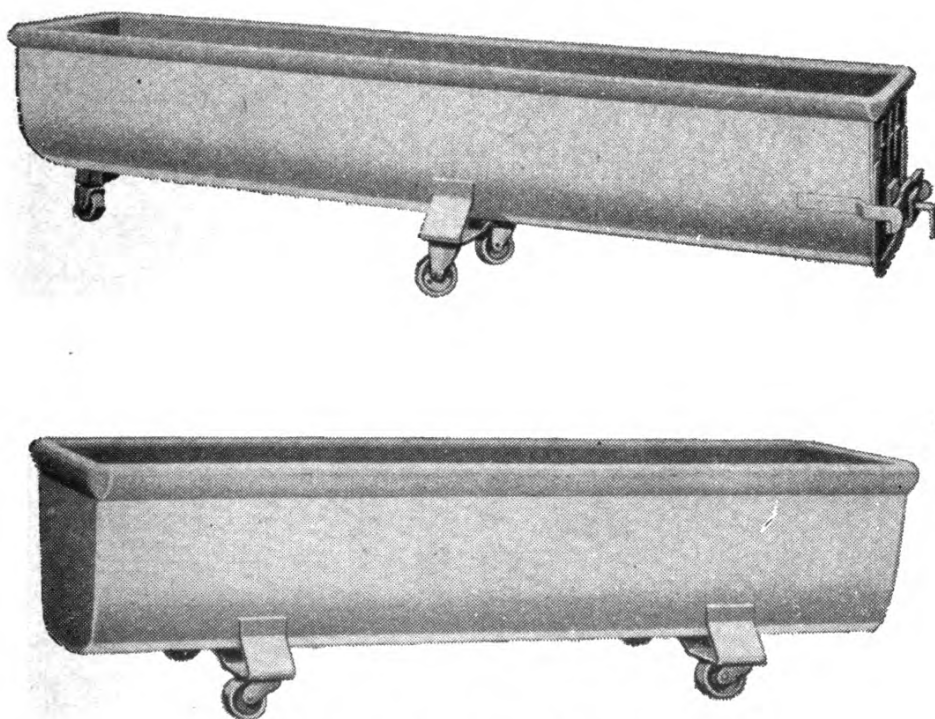


Figure 165.—Dough troughs.

ROPE changes the bread into a strong smelling, brownish, soft, sticky mass that can be pulled into strings or rope. (Hence the name). High temperatures can be controlled by using ice for part of the water. A few other precautions will help you prevent the growth of rope. Sterilize all the bread making equipment. After the bread is baked, cool it rapidly. If you still obtain ropy

bread, add one quart of vinegar for each 100 pounds of flour used.

When the dough is well mixed, remove it from the mixer. Place this dough in troughs. If troughs are not available, let the dough ferment right in the mixing bowl. The fermentation period is the gas-forming period. Dough troughs are shown in figure 165.

After about two hours test the dough to see if it is ready for punching. Push your extended fingers into the dough as illustrated in figure 166 and withdraw them quickly.



Figure 166.—Testing for the punch.

If the dough falls away it is ready for the punch. If it swells and fills in the gap made by the fingers, it must be allowed to stand a while longer.

THE PUNCH

When the dough is ready for punching, pound and press the dough with your hands until much of the gas which developed is removed (figure 167).

The punch brings new food into contact with the yeast and makes the dough ready for the next steps. It also helps equalize the temperature of the dough and makes the dough more uniform.



Figure 167.—The punch.

Let the dough stand for about 20 minutes after punching—so it can loosen up. Then divide it into pieces just large enough for loaves. The dividing can be done either by machine or by hand. In hand dividing, each piece should be weighed. In machine dividing, only an occasional piece need be weighed. Under ordinary conditions, a pound loaf of bread is produced by 18 to 18½ ounces of dough. Round up each of these pieces by hand or by machine in order to deal the cuts.

INTERMEDIATE PROOF

Allow the rounded pieces of dough to rest on the bench for 10 to 15 minutes. This is called INTERMEDIATE PROOF. The term “proof” is simply a baker’s way of indicating additional fermentation for the dough.

After the intermediate proof, your next step is to mold or form the pieces into loaves, using as little dusting flour as possible. Grease the pans lightly to

prevent the loaves from sticking. Place each loaf so that the molding seam faces the bottom of the pan. The loaves should be long enough to reach the ends of the pan.

MORE PROOFING

As all this handling compresses the dough, it is necessary for the loaves to rise again. This is known

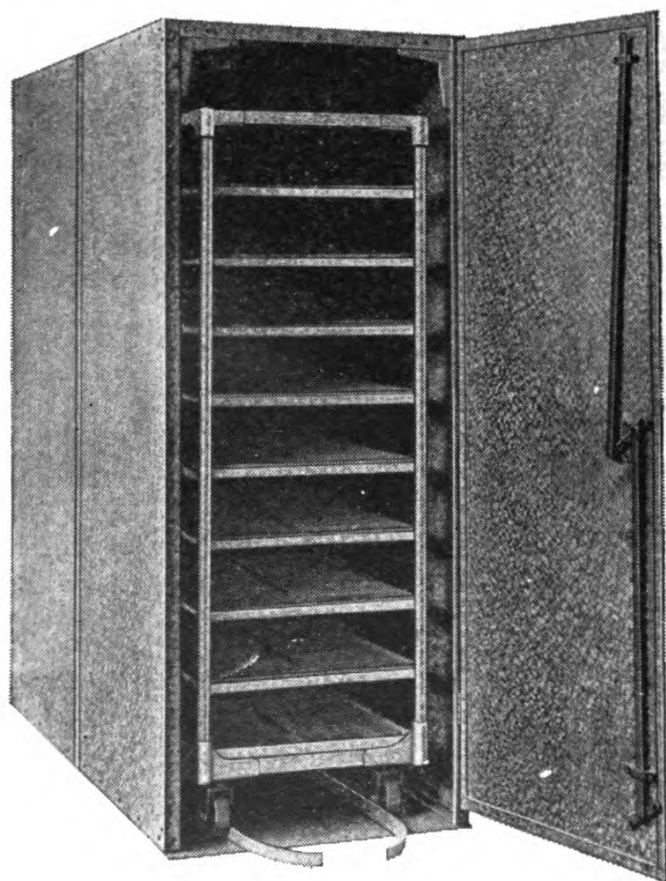


Figure 168.—Proofing cabinet.

as PROOFING. Place the pans of dough in the proofing cabinet (figure 168), where a temperature of 95° to 98° F. and a relative humidity of 80 percent to 85 percent should be maintained.

At this temperature the action of the yeast will be good. The high humidity prevents the loaves from drying out and crusting over. Allow the loaves to

proof until they have about doubled their original size. This should take from 30 to 60 minutes.

BAKING THE BREAD

After proofing, the loaves are ready for the oven (figure 169).

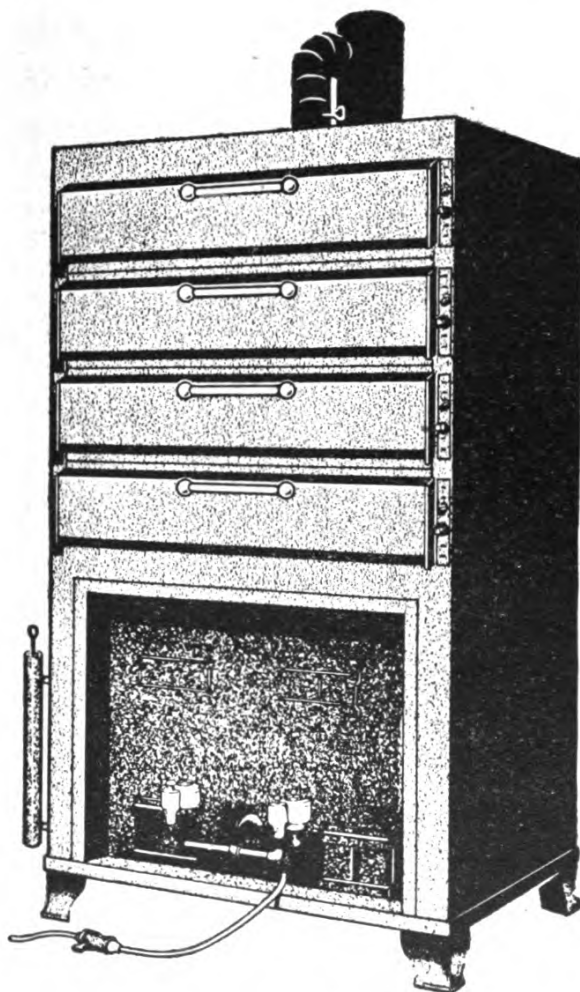


Figure 169.—Bake oven.

Oven temperatures should range between 375° F. and 450° F. depending on the type and size of the loaf. The **LARGER** or **THICKER** the loaf the **LOWER** the temperature. Keep the heat even. An oven that is too hot for only a few minutes may cause a crust to form on the loaves before the inside is properly baked.

Load one-half of the oven first, working from the rear to the front. Space the pans about $\frac{3}{4}$ of an inch apart so the heat can get at each part of the loaf equally.

The bread bakes in from 35 to 45 minutes. When unloading, first remove the half that was loaded first. Cool the bread gradually to avoid cracking at the crust. However, if you are having difficulty with ROPE, you should cool the bread quickly.

IS YOUR BREAD GOOD

Use the check list on page 000 to find out where your bread needs improvement. Only by finding out what's wrong can you hope to improve. And you'd better find out for yourself rather than wait for somebody to tell you.

The points to check are put down in an order that can be followed easily—not in the order of their importance.

The first column of the list tells you the points to check. The second column describes how the bread should be. The last column indicates some of the things that might be wrong.

Check your bread for every point. Make a note of each item that isn't just as it should be. For example, if the crust is too dark, write that down. Maybe the crumb has an off color. Make a note of that. When you get through you may find several places where your bread can stand improvement.

HOW TO IMPROVE YOUR BREAD

The time spent in checking your bread is worthwhile—BUT only if you take steps to make a better batch of bread the next time you bake.

Common sense will tell you what to do for some of the defects. For instance, if the bread is dark instead of golden brown, it may have been baked

BREAD CHECK LIST

OUTSIDE

POINTS TO CHECK	WHAT YOU WANT	POSSIBLE FAULTS
Color of crust	Golden brown	Light, dark, dull.
Size of loaf	Standard size	Large or small.
Shape of loaf	Symmetrical (even in shape)	High, one end high, dumbbell shaped, overlapping sides.
Evenness of bake	Baked the same on all sides	Light side, or bottom, dark side or bottom, not uniform.
Break and shred	A uniform meeting of the top and sides	Wild or coarse break, not enough break or shred on the ends, "shell" crust.
Crust	Tender, even surface and thin	Tough, thick, hard, brittle.

BREAD CHECK LIST

INSIDE

POINTS TO CHECK	WHAT YOU WANT	POSSIBLE FAULTS
Grain	Close, even uniform	Open, large holes, coarse, non-uniform, thick cell walls.
Color of crumb	Creamy white	Chalky or dead white, yellow, gray, dull streaked, spotted.
Texture	Firm, velvety soft and elastic	Rough, harsh, doughy, crumbly lumps.
Aroma	Pleasing sweet odor	Sour, cheesy, musty, moldy, ropy, rancid
Taste	Pleasing sweet taste	Too salty, flat, too sweet, sour, rancid, cheesy.

too long. Perhaps you need to study the formula a little more to be sure you follow the directions. And how about the ingredients? Be certain that they are in the best of condition.

You'll also find some definite suggestions for improving your bread on page 406 of your 1944 *Navy Cook Book*. Use these. They're good.

BASIC SWEET DOUGH

By all means, learn how to make and use basic sweet dough. From this dough you can make more than 40 different kinds of cakes and rolls—the kind the men go for. Cinnamon rolls, raisin buns, coffee cakes, doughnuts, twists, and Danish pastries are only a few of the possible uses. Some kind of topping is ordinarily used to make these products more attractive. Fruits, nuts, and cream fillings can be used to improve the tastiness.

The *Navy Cook Book* method of mixing sweet dough is simple and fast. The mixing can be completed in three minutes. After mixing the ingredients given in the recipe, allow about two hours for the yeast to get in its work. Then “punch” the same as you do bread dough. Let the dough rest for another 20 minutes before you cut it up into the sizes you wish. Let these pieces stand in the proofing cabinet until they have doubled their size. Bake the large pieces at 375° F. and the small ones at 425° F. THE SMALLER THE PIECES, THE HOTTER THE OVEN.

Basic sweet dough may be kept in the refrigerator up to 72 hours before using. This will enable you to mix up the dough during times when you aren't very busy. Then you can bake it as needed.

If you wish to refrigerate the dough, cut the fermentation time down to about one hour.

Then either punch and divide it into 8 to 10 pound pieces or make it up into rolls, buns, or twists. Larger pieces ferment too much before the cold of the re-

frigerator gets to the center of the pieces. Place the dough in a refrigerator that is kept between 32° and 40° F. When you're ready for baking, take the dough from the refrigerator and let it stand until it comes to room temperature. Make it up into baking sizes if you haven't already done so. Then proof and bake the sweet dough in the normal way.

HOW TO MAKE CAKE

Let 'em eat cake. The men like it and it is good for them. A good cake is light—not heavy or soggy. Cakes can be divided into three kinds depending on the way they get their lightness.

The ordinary layer or loaf cake is made light by the action of the baking powder. Pound cakes depend chiefly on the air that gets in during the mixing process. And, sponge cakes are made light through the beating of the eggs and sugar.

THE ORDINARY LAYER OR LOAF CAKE

The easy cake mixing method given in your *Navy Cook Book* was developed only after much work and careful study. Your part is to blend ALL the DRY ingredients—including the shortening—with the eggs and part of the milk until you have a smooth batter. Add the rest of the milk as you are doing the mixing. That's all there is to it. You can mix cake by this method in less than 7 minutes with a mixing machine. The first speed of a three-speed machine, or second speed or a four-speed machine are usually used in mixing the batter. Cake batters up to 25 pounds can be put together by hand. Naturally, it takes longer than when you use a machine.

For best results, cake batters should be mixed at temperatures between 60° F. and 85° F.—75° F. is best. The temperature of the ingredients themselves should also be about 75° F. during the mixing. Cold

shortening gives a lumpy batter that won't mix well with the other things. Cold milk or eggs make the batter stiff. The cakes either come out too small or they split.

Too warm a batter gives cakes with poor volume and coarse grain. Cakes made with warm batter may also have tunnels and huge holes in them. If necessary, use refrigerated milk and eggs to keep the batter temperature down where it belongs. Or—you can use dried milk made up double strength and then diluted with cracked ice. Evaporated milk can also be diluted with cracked ice and used in place of regular milk.

POUND CAKES

In general, pound cakes are mixed in the same way as layer cakes. About the only difference is in the mixing speed—higher mixing speeds are used for pound cakes in order to get more air into the batter. Use the second speed on a three-speed machine or the third-speed on a four-speed mixer.

Proper batter temperature is extremely important in making good pound cakes. (60° F.—85° F.). Mix the batter in amounts sufficient to cover the mixing arm on the mixer or your cakes will be coarse. Be sure to scrape down the batter clinging to the sides of the mixing bowl—do this frequently if you want to produce a uniform batter.

SPONGE CAKES

Sponge cakes may contain little or no baking powder as they depend upon the beaten eggs and sugar for their lightness. Eggs and sugar beat up best when they are at a temperature of 120° F.

This foamy mixture must then be mixed very carefully with the other ingredients. This can be done in two ways. The other ingredients may be added, one by one, to the beaten eggs and sugar—or, the other

ingredients may be mixed into a batter and the egg and sugar mixture carefully folded into the batter. Either way gives good results if done properly.

If your cakes aren't coming out right, take a look at page 402 of your 1944 *Navy Cook Book*. It may help you spot your trouble.

CAKE ICINGS

Good icings are to cake what sugar is to coffee. Your *Navy Cook Book* gives you recipes for four different kinds—fudge, cream, fondant cream, and marshmallow. Cream and marshmallow icings are light and fluffy. They ice more cake per pound of icing. On the other hand, fudge type icings have a heavier consistency that appeals to a great many men.

Make use of these different varieties of icings to give character to your cakes. Cream icings are the easiest to make because they require no cooking. It's also easier to get variety with this type. See page 366 of the 1944 *Navy Cook Book*.

Always let the cakes cool to room temperature before you add any icing. Apply the icings at the temperatures indicated in the formulas. You'll find that they will then spread on easily and smoothly. Your cakes will have that professional touch which adds much to their appeal.

All icings except marshmallow can be stored for a week if kept under 60° F. Use the refrigerator if possible. Cover your icings with waxed paper to prevent crusting. Make up marshmallow icing only as needed—it toughens after standing for only a little while. Left-over marshmallow may be added to a new batch while the new batch is being mixed.

PIE—THE ALL-AMERICAN DESSERT

Pies were invented in this country many years ago. And they have been popular ever since—especially with men.

A good pie is made up of two things—a tasty filling and a light, tasty crust. There are three different kinds of good crusts. Here's how to make 'em.

TYPES OF PIE CRUST

For a **FLAKY** type crust, mix **ALL** the shortening with **ALL** the flour. The mixture should be full of small lumps. Add cold water, but mix very little.

For a **MEALY** crust, mix **ALL** the shortening with **HALF** the flour. Add the balance of the flour and mix it enough to break up the creamy mass.

For a **SHORT FLAKY** type crust, mix **HALF** the shortening with **ALL** the flour until there is a good distribution of the shortening. Then add the rest of the shortening and mix it in lightly so that only small lumps are left in the dough. Add the cold water and mix lightly.

HANDLING THE DOUGH

If the pies are to be made up immediately after mixing, dump the dough on a lightly floured bench. If they are to be made up at a later time, take the dough from the mixer, cover it with waxed paper to prevent crusting, and place it in the refrigerator until you are ready to use it. Dough that has been stored in the refrigerator makes up best if it is brought to room temperature before it is rolled out.

TWO-CRUST PIES

About 14 ounces of dough is required for a 17-inch pie with two crusts. A 17-inch pie is 17 inches across the middle. About 8 ounces is used for the bottom shell and 6 ounces for the top crust.

Roll out the bottom shell dough until it is about $\frac{1}{8}$ inch thick. This piece should then be slightly larger than the pie tin. Fold this bottom piece over once

(along a diameter) and lay it over one side of the tin (figure 170).

Then unfold it so the whole tin is covered. See that there are no air bubbles under the paste.

Next, put in the filling. Roll out the top crust dough until it is about $\frac{1}{8}$ inch thick. Then moisten the upper edge of the lower crust and lay the top crust dough over the whole thing. Trim off the edge. Seal the

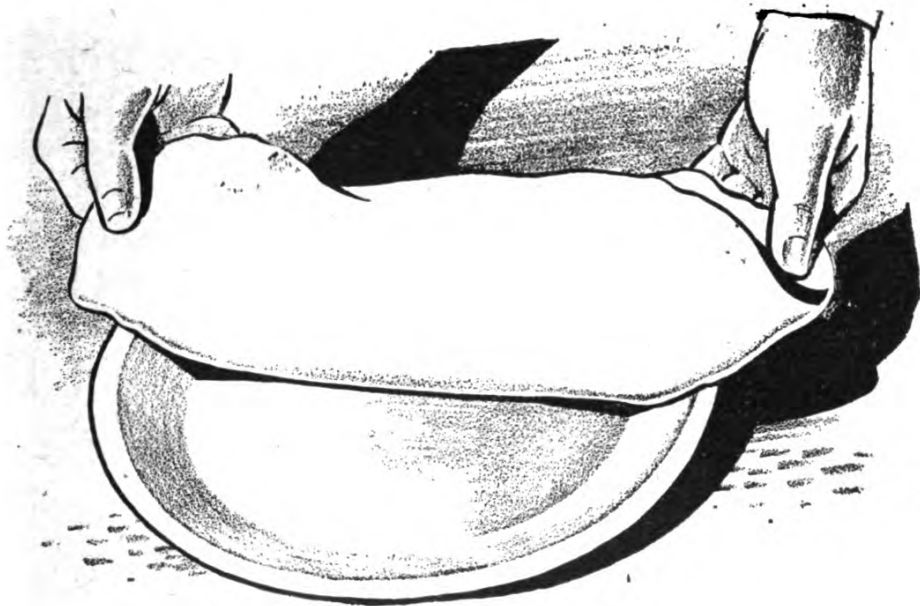


Figure 170.—The bottom shell.

edges of the crust by pressing down on them with your fingers or with a fork that has been dipped in flour. Slit the upper crust here and there to permit the escape of steam when the pie is baking. The top crust will get more of a golden glow if you brush it lightly with milk, cream, or butter before you begin the baking.

SOMETHING FANCY

Get fancy with your pies once in a while. The men will appreciate it. A fancy effect can be obtained on pies if you use strips of dough instead of a complete top crust. This gives a lattice work appearance. For

festive occasions such as Thanksgiving or Christmas, figures representing turkeys or Christmas trees can be cut from the paste and used instead of the strips.

OPEN PIES

For butterscotch and other similar open pies, the bottom shell is baked before the filling is added. The bottom shells of some open pies, such as pumpkin, are baked with the filling.

To make a fluted rim for an open pie, trim the pastry about one inch larger than the tin. Turn the edge in and under all the way around. Raise this double fold so that it stands up with the cut side resting on the rim. Then, with the tip of the right index finger on the inner side, and the left thumb and index finger on the outer side, pinch the dough in and down all the way around the rim.

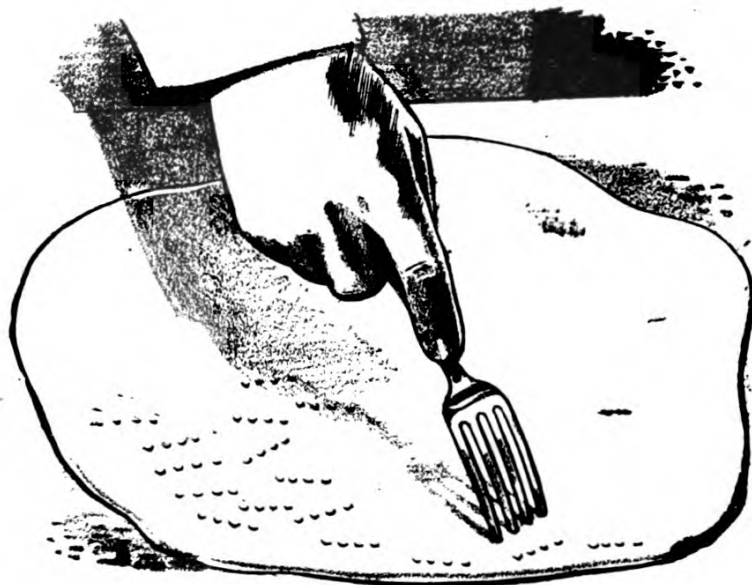


Figure 171.—Docking the bottom shell.

If you're making a pie where the bottom shell is baked separately, dock (puncture) the pastry with a fork (figure 171) at a number of different points on the bottom of the pan.

PIE FILLINGS

Two general types of fillings are used in pies—fruit and soft fillings. The formulas for fruit pies in the *Navy Cook Book* have been developed to give fillings of proper consistency and proper sweetness. Of course, YOUR men may like more or less sugars in their pies. Adjust the amount of sugar you use accordingly. A good fruit pie will “run” only slightly when cut. Use very little flour, cornstarch, tapioca, or other thickener.

You’ll find that the Navy formulas produce soft pie fillings that taste swell and cut nicely. The formulas are well-balanced and easy to put together. Soft pies are usually finished off with an egg-white meringue. The secret of a good meringue is to use PLENTY of egg white.

TROUBLE SHOOTING

A man is known by the company he keeps. A baker is known by the pies he makes. Do your men eat the fillings and leave the crusts? Maybe that’s your fault. Maybe the crusts are tough and unappetizing. Check on these things. Did you use enough shortening? Are you sure you didn’t add too much water? Maybe you didn’t blend the shortening and flour properly before you added the water. Or, possibly you over-mixed the pie pastes after you added the water. Any of these things could be the reason for tough crusts.

Sometimes custard pie fillings separate and become “honeycombed.” This may be due to baking at too high a temperature. Or, perhaps you didn’t use enough eggs or cornstarch in the filling.

HOW TO MAKE COOKIES

Cookies go very well with ice cream or fruit and give you another way of getting variety in your deserts. The simplified cookie mixing method given in

your *Navy Cook Book* was developed to make your cookie making job an easy one.

All you need to do is dump all the ingredients into the mixing bowl and mix. This mixing should be stopped as soon as the ingredients are properly blended. It shouldn't take over 2 to 3 minutes using medium speed on a mixing machine. Mixing too long makes a dough tough that won't spread out enough when baking. Overmixed cookies may be small and often are tough and leathery. Under mixing has the opposite effect. Undermixed cookies spread out too much during baking. They may dry out and have a coarse texture.

One of the most common headaches in making cookies is that they stick to the pan. You can lick this problem by using pans that have been completely cleaned and dried and then properly greased. A soft liquid batter requires the pans to be both greased and floured. Shortbreads, ice box cookies, and similar rich dough cookies require no pan greasing at all. There is enough shortening in the dough to keep them from sticking. Most average rich cookies require that the pan be greased only.

A word about "conditioning" new pans. Before using, new pans should be lightly greased and then baked in a hot oven (400° F.) for about 4 hours. This treatment puts a hard film over the pores in the metal. This film eliminates most of the sticking troubles.

Another thing—heat from the oven will not reach the cookies evenly if the pans are battered, bent, or scratched. If damaged pans can't be fixed, don't use them.

DOUGHNUTS

You'll want to be able to make doughnuts—the kind that don't need to be dunked in coffee.

Doughnuts are cooked in deep fat rather than baked in the oven like most other bakery products. There are

two kinds of doughnuts—cake doughnuts and yeast raised doughnuts. Cake doughnuts get their lightness from the leavening action of the baking powder used in the dough. Yeast raised doughnuts are made from basic sweet dough. They get their lightness from the fermentation of the yeast.

CAKE DOUGHNUTS

The *Navy Cook Book* has a separate chapter given over to the making of cake doughnuts. They're considered that important.

The most important part of the doughnut making job is to control the amount of fat that is absorbed by the dough during the cooking. You don't like greasy doughnuts. Neither do the other men.

Absorption of frying fat into the doughnut can be controlled by observing three precautions. First, be sure you use a balanced formula such as the ones given in your *Navy Cook Book*. Too much sugar or richness in the dough will make the doughnuts greasy. Next, control the mixing carefully. Undermixed doughs absorb more fat. Finally, watch the temperature of the frying fat carefully. Too low temperature makes for excessive absorption.

BASIC SWEET DOUGH DOUGHNUTS

Yeast raised doughnuts are handled in the sweet yeast goods section of the *Navy Cook Book*. Here's the way you go about making them.

After the basic sweet dough has been mixed, roll it out until it is about $\frac{1}{4}$ inch thick. Cut the dough into doughnut shape. (Other shapes can be used if you wish). Place these pieces on floured cloths. Let them proof until they are about double in size. Then fry the pieces in hot deep fat. Keep the temperature of the fat at 365° F. to 375° F. Only $1\frac{1}{4}$ to $2\frac{1}{2}$ minutes are required for frying.

Either serve the doughnuts plain or finish them off by dusting with a little powdered sugar that has been sifted with a little cinnamom. Be sure the doughnuts are cool before you sugar them.

CARE OF THE FRYING FAT

The Navy furnishes you with an all vegetable shortening for your frying kettles. If properly cared for, this fat will help you produce appetizing products free from any disagreeable fatty taste.

Duty in the frialator is the hardest job any fat has to perform. The continued heating to frying temperature eventually causes the fat to smoke and develop disagreeable tastes. Avoid this as much as possible by never heating the fat to more than 400° F. Keep the equipment clean and strain the fat after each use to get rid of the burnt food particles that are bound to accumulate.

When the fat is no longer good for use in cooking, save it for making explosives.



CHAPTER 13

DISHING IT UP

WE EAT WITH OUR EYES

Dishing it up? That ought to be easy. Just throw the food on the trays and let the men carry it away. Wait a minute, though. Is that the way YOU like to get YOUR food?

Many years ago a wise man said, "We eat with our eyes." You'll find the statement still true. The food must LOOK right as well as BE right. The men will eat the plainest food if you make it attractive to the eye. They may dislike and even reject some of the fanciest and most expensive meals if you serve the food in a slovenly and unattractive manner.

Sure, you've got to serve fast. But that's no excuse for doing the job in a careless way.

EATING FOR ENJOYMENT

The men will eat almost anything if they are hungry enough. But the best benefits from the food

are received only when the men enjoy their eating. The sight, smell, and taste of the food should make their mouths water. Under such conditions, digestion is at its best and the most value is received from the food.

If EVERYTHING is clean and neat, the chances are good that the food will look attractive. In this respect, everything means EVERYTHING. Every man in the serving line must look clean and be clean. That requires a fresh shave every day and hands washed several times during the day. Clean hats and aprons should be worn. If jumpers are used, the sleeves should be rolled up to prevent them from touching any of the food.

Keep empty containers off the deck and serving tables. Have all metal parts shining so that they look clean in addition to being clean. Wipe up spilled foods immediately.

The tabletops where the men eat should be clean and inviting. Wash the salt, pepper, and catsup containers daily—oftener if necessary.

Arrange these containers in some uniform order that will appeal to the eye. One method is to place the taller containers in the center and arrange the others in order according to size.

TRICKS OF THE TRADE

Soft foods such as mashed potatoes or turnips should be neatly rounded off—not just thrown into the tray. Mashed potatoes can be made to look more appetizing if you smooth them out carefully in the serving tray. Indenting them here and there with a tablespoon and dropping bits of butter into the indentations will also help.

Slices of roast beef, veal, pork, and lamb should be of uniform thickness. Lay the slices on the serving trays neatly and evenly.

Cut pies and cakes neatly. Get rid of the loose crumbs when you put the pieces on the serving counter.

A little cracked ice added to butter, olives, radishes, green onions, and celery makes these foods look more appetizing.

DO SOME GARNISHING

Garnishing is one of the best ways to make food attractive. It adds that little something which makes the men enthusiastic about eating. Here are just a few suggestions for garnishing. You can think of many others.

Place a few strips of pimiento and green pepper over the top of cabbage salad to give color to the salad. Sprinkle a little paprika over mashed potatoes or potato salad for the same reason.

When serving liver and bacon, lay a few strips of bacon over the liver instead of keeping the liver and bacon separate.

Crescent-shaped slices of lemon make an excellent garnish for baked fish, salmon hash, or fried oysters. A little parsley or a few pieces of french fried potatoes are also good for these foods.

Sprinkle a little chopped parsley over soups, stews, and gravies just before serving. Use a little paprika on macaroni and cheese. Sliced hard-boiled eggs make spinach more attractive. And small pieces of cheddar cheese are good with apple puddings and apple pies. Use a few slices of green pepper as a garnish for stewed tomatoes.

Shredded cocoanut and canned sour cherries can be used to improve the appearance and taste of many types of puddings. Diced pineapple spread over corn-starch or tapioca pudding and then topped with thinly spread cocoanut makes the men go for these desserts.

Use enough variation in your garnishes so they

don't get monotonous. It would be better not to use any than to keep repeating the same garnish.

Shift the order of the foods on the serving table every once in a while so that things look different.

KEEP HOT DISHES HOT

If the food is supposed to be eaten hot, see that it is HOT when served. This means you will need to bring the food in from the galley piping hot. Bring out only small amounts at a time so that it doesn't cool before being served. Keep the containers covered except during the time of actual serving.

Heat up the trays into which the food is placed. Cold containers cool the food quickly. Start serving from the end of the pan. Don't scoop out the middle and leave the ends to dry out.

Understand thoroughly the operation of all valves in the steam table so that enough heat will be provided and no damage will be suffered. The steam pipes crack easily under improper treatment.

Always fill the steam table with water to the level of the over-flow pipe.

KEEP COLD DISHES COLD

If the food is supposed to be cold, SERVE IT COLD. Keep cold food in the refrigerator until the last minute. Then make arrangements for keeping the food cold until it is eaten. Cracked ice will do the trick.

Keep the cold foods as far away from the hot foods as possible or everything will be lukewarm. Men don't get enthusiastic over lukewarm soup or melted ice cream.

Fresh fruits—apples, oranges, or grapes—taste best when they are chilled. Cut the larger bunches of grapes into smaller bunches.

THE RIGHT PORTIONS

It takes a little practice to learn just how large the servings should be. The men must be satisfied. Yet, giving them too much food just makes for waste. Worse yet, you might run out before you get all the men served.

The *Navy Cook Book* gives you the approximate weights for portions of different foods. Before the men take their places in the serving line, weigh out several servings of the foods they are going to handle. This will give you an idea of the correct portion size. Sometimes the men will ask for smaller portions—always comply with such requests.



CHAPTER 14

SOMETHING ABOUT POISONS

WHY BOTHER

Why know ANYTHING about food poisoning? Only so you can avoid serving food that may put your men out of action. Fortunately, food poisoning is extremely rare in the Navy. But when it does occur, it can be very serious. On 12 May 1936—255 men aboard a cruiser were rendered temporarily unfit for duty because they had eaten a cream puff mixture which wasn't fit to eat. In time of war that could be almost as disastrous as a torpedo hit.

The usual symptoms of food poisoning are vomiting, diarrhea, and cramps. Any of these are enough to put a sailor out of action for several hours. Occasionally, there are more serious complications. The symptoms usually occur within a few hours after the infected food has been eaten.

Your job is made more difficult by the fact that the food can taste, smell, and look good, and still contain

enough poison to put men out of action. There are **THREE** main sources of food poisons—**BACTERIA**, **CHEMICALS**, and **POISONOUS PLANTS OR ANIMALS**.

BACTERIA FOOD POISONING

Most food poisoning cases are a result of the action of certain types of bacteria—commonly known as germs. Bacteria are small living organisms—so small you can't see them except through a microscope.

You can't get away from bacteria. They are found everywhere—and most of them are helpful in your daily life. Only a few types are harmful. Figure 172



Figure 172.—Staphylococcus bacteria.

shows you how one type of harmful bacteria (staphylococcus) looks when it is greatly magnified under the microscope. This type appears in boils, in pus from cuts on hands, and in spray from sneezing and coughing. When such bacteria are provided with good living conditions—**FOOD** they like, at a **TEMPERATURE** they like—for a sufficient length of **TIME**, they multiply or reproduce rapidly and make the food unfit to eat.

Ham, chicken, turkey, custard filled products, beef hash, and tongue are particularly good developing places for harmful bacteria. The best growing temperatures are between 65° F. and 115° F. In three-fourths of all food poisoning cases, the food was all right when it was first prepared. The spoiling oc-

curred between the time it was prepared and the time it was eaten. There have been cases where food that was left standing for just a few hours at room temperature contained enough harmful bacteria to cause illness.

WHAT'S TO BE DONE ABOUT IT

What can be done to prevent bacterial food poisoning? Plenty.

Men with boils or infected cuts are unsafe food handlers. They should be kept away from the food. Sneezing and coughing must be controlled around places where food is being prepared. Men who have colds or are otherwise ill don't belong in the galley or bakeshop.

If food is always served immediately after it has reached the right degree of "doneness," bacteria won't have a chance to develop and cause trouble. **OBSERVE THE 4-HOUR RULE.** Under all circumstances, serve food within 4 hours from the end of the cooking period.

If food is not to be served right away, it should be either thoroughly chilled to a temperature of 50° F. or below or held at a temperature of 130° F. or above. These temperatures are outside the best growing range for bacteria. Ordinarily, you'll use the chill method because holding foods at high temperatures spoils the flavor and destroys many of the food values.

When you wish to chill foods, be sure **ALL** the food is really chilled. Place the food in shallow pans (not more than 3 inches deep). Food in deep pans tends to retain its heat for long periods.

Bread puddings, custards, eclairs, and foods with cream fillings should be covered, cooled quickly, and placed in the refrigerator or some other cool place until ready to serve. If you can't handle them in this manner, don't serve them.

Food to be ground for hash or other dishes should be ground JUST BEFORE cooking. The ground food gives the bacteria more food surface on which they can develop. The grinding process also warms the food up to the point where bacteria may reproduce rapidly.

RECONSTITUTED dehydrated products spoil just as fast as fresh foods. Therefore, reconstitute dehydrated foods just before you are ready to serve them.

The same is true of frozen foods once they have been thawed. Thawed foods spoil just as fast as the fresh product.

Poisoning from commercially canned foods hardly ever happens anymore. But it's wise to be careful. When it does occur, this type of food poisoning is deadly. If cans are swollen, get that food surveyed. Do the same with off-color canned foods. NEVER taste canned foods that don't look right. If the food in the can is poisonous, ONE taste may cause death.

CHEMICAL POISONING

People have been chemically poisoned by eating food that had been cooked in the wrong kind of pots and pans. Cheap, gray enameled cooking pots have caused ANTIMONY poisoning.

Acid drinks or acid foods—such as lemonade or raspberry-gelatin dessert—prepared in a cadmium plated utensil have caused CADMIUM poisoning.

Apples cooked in a galvanized iron kettle have given ZINC poisoning.

YOUR answer to all this is simple. Use only the cooking utensils furnished officially by the Navy. If it is ever necessary to use others, see that they are not of the types mentioned above.

Beware of LEAD and ARSENIC poisoning. Keep any arsenic preparation that might be used for destroying insects or rats in a place where it can't possibly be mistaken for anything else. Handle poisonous fly sprays with special care. Fruits such as apples, pears,

and peaches that are eaten without removing the outside covering should be washed before they are given to the men. Such washing will eliminate all possibility of poisoning from poisonous sprays that may have been used by the fruit grower. Cleaning compounds are sometimes poisonous. Handle them with care.

FLUORIDE poisoning is caused by sodium fluoride. This substance is often used to get rid of water bugs or cockroaches. It is a white powder that can easily be mistaken for baking powder. Keep the containers out of the galley and bakeshop.

METHYL CHLORIDE poisoning is caused by leaking mechanical refrigerators. Check your equipment daily for any such leaks.

There is no danger from tin or aluminum poisoning. People have actually eaten broken bits of these metals with no ill effects. It is perfectly all right to keep food in a tin can after the can has been opened. In fact, the can is more sterile than a dish that has been washed in the usual manner.

POISONOUS PLANTS AND ANIMALS

Every effort is made to keep poisonous plants and animals off the ship. But sometimes they get aboard anyway. You ought to know about the danger spots.

There have been a few serious outbreaks of poisoning from eating MUSSELS and SHELLFISH. No one knows exactly how these animals become poisonous and it is very difficult to tell when they are poisonous. Be sure the medical officer checks any such seafoods you may wish to serve.

MUSHROOMS are tricky. There are over 70 different kinds that are poisonous. Only an expert can be sure whether or not a certain mushroom is fit to eat. LET THE EXPERT DECIDE FOR YOU.

Rhubarb stalks make an excellent food. But don't use RHUBARB LEAVES. These leaves contain a substance that is poisonous to some people.

There are many other poisonous plants and animals spread throughout the world. The safest rule is not to use strange plants and animals for food unless they are used and recommended by the natives of that region.

SOME OTHER DANGERS

DYSENTERY may be spread either by impure water or contaminated food. The men are more likely to get this disease if they aren't getting enough vitamins. Your main safeguard against dysentery is absolute cleanliness.

TRICHINOSIS is caused by a very small worm known as the trichina. The trichina sometimes comes aboard in pork. Inspectors can't be blamed for passing pork containing this worm as it is too small to be seen. But YOU have no excuse for allowing anybody to get trichinosis. If you cook the pork THOROUGHLY the worm dies and causes no trouble. Rare pork is dangerous—never serve it.

KEEP IT CLEAN

The worst enemies of the cook are dirt and filth. All food handlers must wash their hands and clean their fingernails frequently. Their clothing must be clean. The equipment and utensils used by food handlers should be kept spotless. Boiling water is the best cleaning agent for equipment and utensils.

Rats, mice, and—most important of all—the common fly, like to live in filth. Do everything possible to keep them under control. There are effective traps for catching rats and mice. And DDT spray will take care of the fly population. If you don't have DDT, other sprays and the good old fly swatter may be effective. Get rid of garbage and wastes—flies like them both. Protect the food from flies by keeping it covered.

Catsup and other condiments left on the table from one meal to another are sometimes sources of poisoning trouble. Empty the bottles after each meal and place the contents in the refrigerator. Wash the containers thoroughly before using them again.



CHAPTER 15

LANDING FORCE COOKING

YOU GO ASHORE

Breakfast is eaten on the attack transports at daylight. The mess cooks bring up on deck big cartons of K rations and pass them out to the officers and men. There is good Navy coffee on deck too—plenty of it. The strange, salty-sweet concentrated vitamin wafers in the K rations need dunking in strong coffee.

You can hear gunfire behind the gray beach line, and nearer, the staccato fire of antiaircraft guns blazing at a low-flying enemy plane that is trying to bomb one of our supply dumps.

The first phase of an amphibious operation is over. A “beachhead” has been established. That is, assault troops have landed, have destroyed enemy shore defenses, and the beach area is in our control.

The Army and the Marines are not the only ones who have gone ashore. The Navy Beach Battalion is hard at work repairing damaged landing boats, keeping the boat traffic under control, and preparing the beach for more landings. The Seabees are chopping

down trees, building roads and airfields. What about you—the Navy cook? Those K rations are all right for a while but they're no substitute for the tasty meals the men have been accustomed to aboard ship. The excitement of the landing operations will keep them from thinking about food for awhile but when the tension is eased they are going to be hungrier then you have ever seen them. And it may be necessary for you to cook ashore for days and even weeks. It is more important than ever that the food you serve be well-balanced.

COMBAT DUTIES

JUST A MINUTE! Before you get around to doing any cooking, you may be given certain combat duties. Wounded men can't be left uncared for. You may be needed to give first aid. Better be up on what the *Blue Jackets' Manual* tells you about such duties.



Figure 173.—Mud range.

You may be ordered to reinforce the stretchermen in bringing wounded men to the dressing station or hospital. When doing this, lay aside any arms you may be carrying and wear the Red Cross arm badge.

You may also be ordered to recover the arms and ammunition of the dead and wounded.

Now get back to cooking. That's your specialty and also the job of this book.

WHAT ARE YOU GOING TO COOK WITH

Special ranges are usually available—ranges which are designed for cooking in the field and which use either wood or gasoline for fuel. You'll have no trouble with these ranges. But sometimes you may have no more equipment than the early American Indians, who used to roam the Western plains. That's when you'll have a real challenge to meet.

• THE MUD RANGE

The mud range shown in figure 173 can be built in a short time. Cover a level piece of ground about 4 feet wide and 7 feet long with a layer of wet clay 3 inches thick. Pack this down and smooth it out. Knock the heads out of two salt or sugar barrels and lay the barrels end to end on this space. Place one of the open ends where you want the front of the range to be. Then pack sand—just damp enough to mold—under the sides and over the tops of the barrels. This forms the frame for the inside of the oven part of the range.

Mix some straw into a thick mud made of clay. The straw acts as a binder and holds the clay together. Pack this mixture on the barrels beginning at the bottom and working up the sides and the back. Make the bottom portion of the side walls about 10 inches thick and the top portion about 8 inches thick.

Before you pack mud on the top, place a block or brick on end on top of each barrel at its center and one at the highest point where the barrels join. Pack some mud around these bricks to hold them in place while you finish covering the top. Flatten the clay on top but do NOT cover the tops of the bricks.

Let the range stand for 24 hours. Then start a fire in the barrels. Keep this fire burning slowly until the barrels are burned out and the oven part is well dried. Remove the bricks or blocks from the top—to create vents or air holes—and the range is ready for use.

Articles to be cooked on top of the range are placed over the vents so that the heat from within will reach them.

When the articles cooked on top of the range are done, you can remove the fire and use the inside as an oven for baking bread or roasting meats.

THE MUD OVEN

If all you need is an oven, follow the directions for making the range but don't bother flattening the top or making vents. See figure 174.

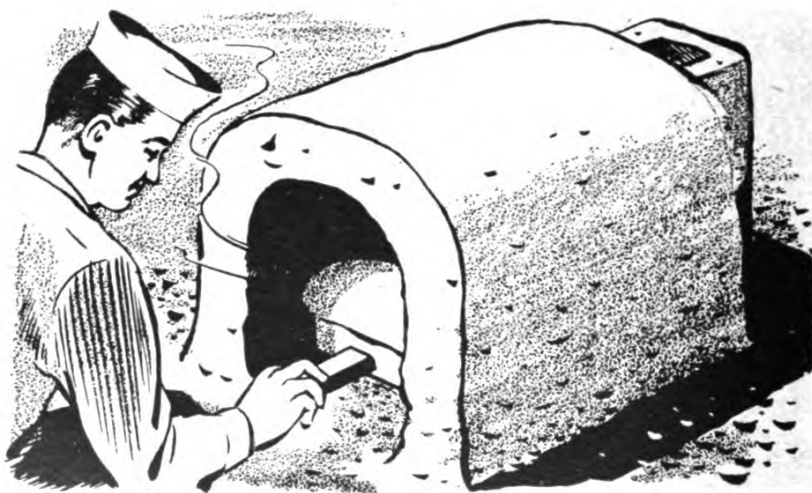


Figure 174.—Mud oven.

Break a hole in the top near the back in order to get a good draft. This will also help you regulate the heat of the oven. You build a fire in the oven and rake out the coals when you are ready to bake. Navy cooks used this type of oven during the terrific fighting on Bataan in 1941-42. It was the only baking equipment they had.

A hole dug in the side of a steep bank (figure 175) can also be used as an oven. Keep the entrance as

small as possible and tap a hole in the back for a flue. Burn a slow fire in this oven to dry out the soil before you start your fire to be used for baking.

Open trench ovens are sometimes used successfully for baking bread. Dig a trench 6 feet long, 15 inches wide and 1 foot deep. Cover the bottom of the trench with stones or bricks. Build a fire in the trench. Let

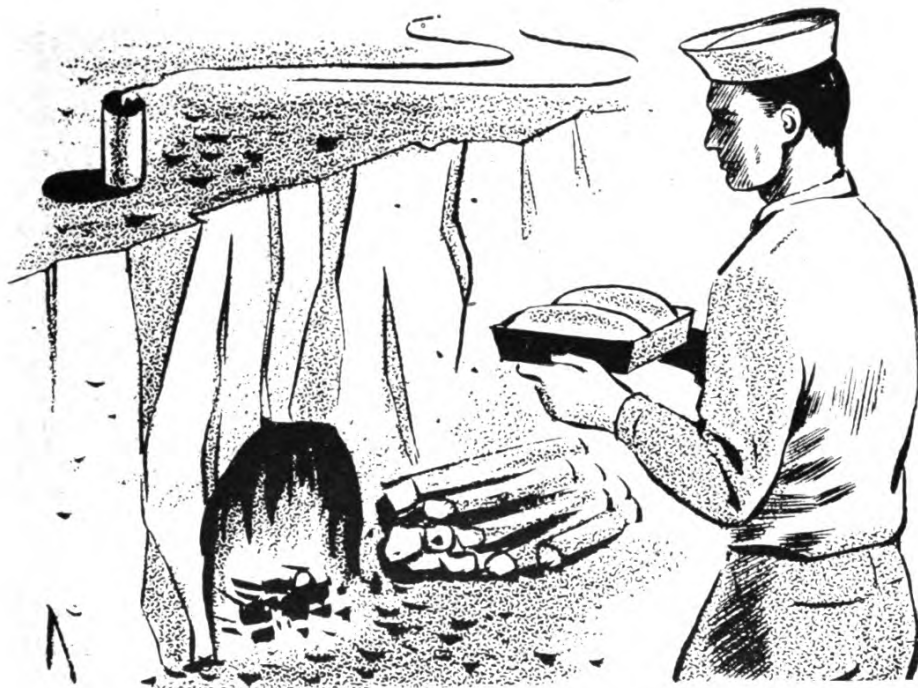


Figure 175.—Steep bank oven.

it burn for two hours. Then remove the coals and sweep the trench clean. Lay the loaves in the trench about 3 inches apart and cover them with a metal sheet (not in contact with the bread). Put the hot coals you removed on top of the metal sheet. Leave the loaves in the trench until they are baked.

COOKING OVER AN OUTSIDE FIRE

If a better way is not available, hang a kettle of food over an open fire as shown in figure 176. A green pole lying in the crotches of two upright posts forms a good support.

If you have more time, dig a trench about a foot deep and narrow enough so you can place the camp kettles right over the trench without having them fall into it. Dig the trench in the direction of the wind in order to provide a good draft. Fill up the space between the kettles with stones, clay, or whatever is available so that a flue running beneath the kettles is provided.

If you will need to cook in this manner for several days at the same camp, dig four trenches coming to-

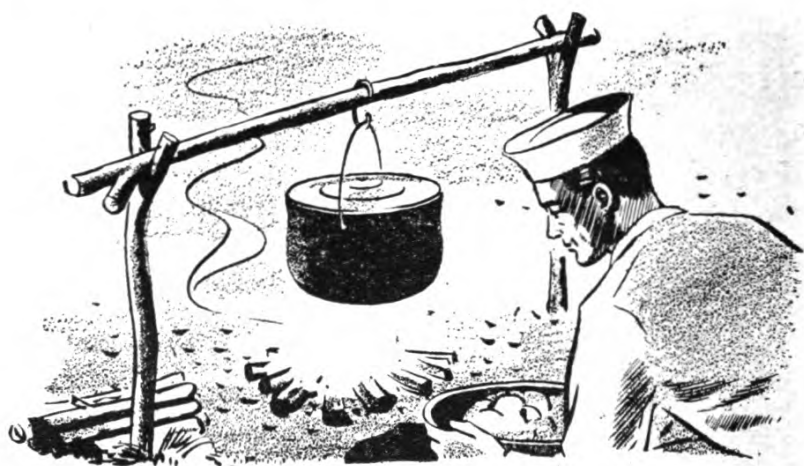


Figure 176.—Cooking over open fire.

gether at a common point in order to take advantage of shifts in the wind. This is shown in figure 177. Build a mud or brick chimney where the trenches come together in order to get a better draft. Then use only the trench that is pointing into the wind.

WHAT TO COOK

Most of the regular meals you cook aboard ship can also be cooked in the field. But stay away from the more elaborate dishes.

If possible, bake a good supply of field bread before you come ashore. This bread will last for three weeks or more if the hard crust isn't broken. You can also bake this bread in a field oven. Your *Navy Cook Book* gives you the recipe. It is well to

remember that the men will have a craving for sweets. So furnish as much jam, jelly, and other sugar products as you can.

It may be possible to get fresh eggs, milk, meat, fruit, and vegetables after you get ashore. Be sure these provisions are inspected and approved by the medical department before you use them. Whenever there is a chance of contamination, sterilize the fruits and vegetables that are to be eaten raw by dipping them in boiling water.



Figure 177.—Four trench cooking system.

Fried eggs and bacon or hot cakes can be prepared easily on a mud range. Soups and stews can be made under almost any conditions. Baked potatoes are also easy to prepare. All you need do is place the potatoes in the hot ashes of a fire that has been allowed to die down. Beans can be cooked by soaking and boiling them as usual and then placing the pot in a hole in the ground that has been heated by fire. Cover the hole and leave the beans overnight. They will be ready for use the next day.

Good soups can be made without the usual soup stock. Use a ROUX as a base. This roux is prepared

by mixing 2 pounds of flour and 1 pound of butter OR 3 pounds of flour and 2 pounds of shortening. Melt the butter or shortening over the fire. Sift in the flour and stir until the mixture is cooked and smooth. Mix in water, tomato juice, or vegetable juices until the soup is of the thickness you wish. Add other vegetables and ingredients as you see fit.

THE WATER SUPPLY

A good supply of pure water is sometimes harder to get than good food and water is even more important. If lake water is used, it should be obtained some distance from the shore.

The available supply of water from a small stream can be increased by building a dam. Always take cooking and drinking water above any places in the stream that might be used for watering animals, bathing, or washing clothes.

Dig out any fresh water spring you might wish to use and line it with stones, bricks, or an empty barrel. Keep the surface drainage out by building a curb around the spring. Clay or mud will do the trick.

But don't allow anybody to drink any water that has not been approved by the medical department. CONSIDER ALL WATER CONTAMINATED UNTIL PROVED OTHERWISE.

PURIFYING THE WATER

The Lyster BAG was designed to make water safe for drinking. This bag consists of a canvas sack 28 inches long and 20 inches thick. It weighs about 7½ pounds and may be folded easily. Its capacity of 36 gallons is sufficient to fill the canteens of 100 men.

Pour clear water only into the Lyster bag. If the water is muddy, let it stand for awhile until the

sediment settles to the bottom or filter it through a blanket BEFORE pouring it into the bag.

Calcium hypochlorite, the chemical used for purifying the water, is supplied in small glass tubes. Pour the contents of one of these small tubes into a canteen cup containing just enough water to form a paste. Fill the cup with water and stir until the chemical is thoroughly mixed. Pour the solution from the cup into a Lyster bag full of water. Wait for 30 minutes before using.

The ortho-toluidine method is used to tell whether you have mixed in enough of the chemical to make the water safe for drinking. Take about $\frac{3}{4}$ of a canteen cup of water from the Lyster bag and add to it eight drops of the ortho-toluidine solution. The color of the water SHOULD become orange or orange-red. A lemon-yellow color indicates that you need to mix in more of the calcium hypochlorite.

Tincture of iodine can be used as a substitute for the calcium hypochlorite. Add $2\frac{1}{2}$ teaspoons of tincture of iodine to the Lyster bag and wait the customary 30 minutes before using the water. One canteen requires two drops of the tincture.

Heat is one of the safest ways to sterilize water, but heat takes time and fuel. The water must be boiled FOR AT LEAST 20 MINUTES and then it has to cool.

Once you get the water pure, don't let it become contaminated again before it is used. Keep water containers well covered. Clean these containers every day with boiling water or rinse them out with a solution of potassium permanganate. Use one-third of a teaspoonful of permanganate to a gallon of water. Canteens should be emptied, dried, and cleaned whenever possible. Avoid the use of a common drinking cup.

DISPOSAL OF GARBAGE

Place cans, boxes, or other receptacles near the kitchen for waste and garbage — these include waste, paper, burned matches, fruit peelings, and cigarette stubs.

Secure the receptacles on a raised platform and keep them well covered. Keep the outside of the containers clean. Scrape or rake the surface beneath the receptacles and shovel the dirt in with the rest of the garbage. Replace the surface with fresh dry earth. This is done to prevent pollution and fly breeding.

The garbage then should either be burned or buried—preferably burned. Steel baskets are often available for burning trash and garbage.

KITCHEN PITS

Dig a pit somewhere near the galley for the liquid refuse. This pit must be covered to keep flies and other insects out. Use boards, brushwood or whatever is available. Pour kerosene or oil into the pit every day to guarantee that no insects will survive.

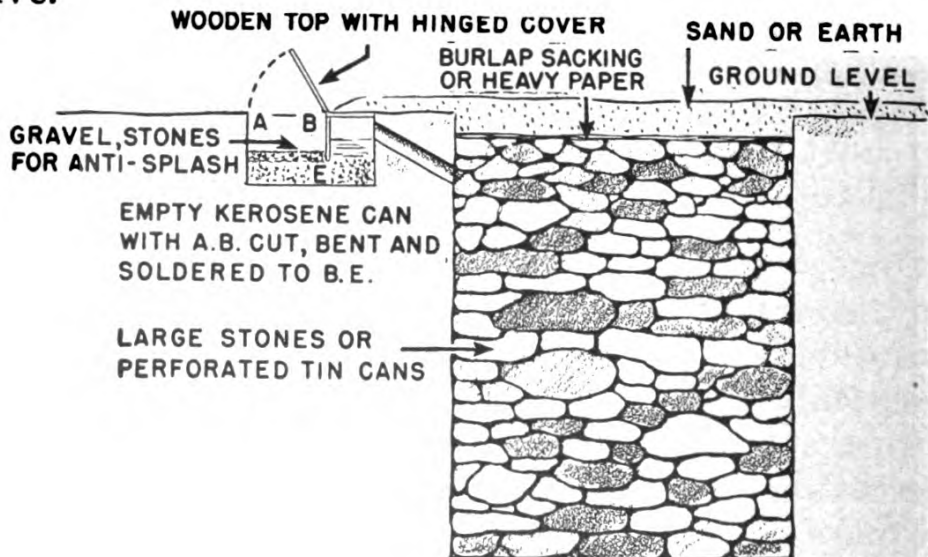


Figure 178.—Kitchen pit.

It may be wise to build a more complicated pit like the one diagrammed in figure 178. This is excellent for dish water, bath water, and other waste water. Notice how the kerosene can, placed on its side, serves as a trap for soaps and greases that would otherwise clog the pit in a short time.

INSECT CONTROL

Flies breed in manure and decayed matter—so keep flies out of the galley. Screen the galleys if possible. Keep the food in covered or screened containers where flies can't get at it. Mosquito netting is a good material to use.

Use traps and fly swatters freely. Sticky fly paper can be made by heating castor oil (5 parts by weight) and powdered resin (8 parts) until the resin is dissolved. Don't boil this solution. Apply it when still hot to glazed paper or paint it on iron hoops or wire strands. Wires so painted should be cleaned and recoated every two or three days.

DDT—made especially for the armed forces—is the most effective means of fighting flies and other insects. Spray it around as much and as often as necessary.

WASHING MESS GEAR

After each chow, all mess gear should be sterilized in boiling water. When mess kits are being used, have the men dispose of the garbage in the receptacles provided. Then have the men file past three cans of boiling hot water, dipping their mess utensils into each of these cans successively. The first can should contain boiling, soapy water, the second and third, boiling, clear water. You can keep the water boiling by placing the cans over a fire built in a trench. No wiping is necessary as the mess gear dries almost immediately from its own heat.

How Well Do You Know The Duties Of

SHIP'S COOK 3c AND 2c

QUIZ

CHAPTER I

FOOD FOR THOUGHT

1. Should a Ship's Cook 3c know anything about the organization of the general mess?
2. What kind of a cooking test may you be asked to take in order to qualify for the rating of Ship's Cook 3c?
3. Why must a Ship's Cook be familiar with the regulations for taking provisions from storerooms?
4. How far in advance should a Ship's Cook plan his menus?
5. What is the source of standard Navy recipes?
6. In order to cut meat properly, what must a Ship's Cook know about the various cuts?
7. What three essential things should a Ship's Cook know how to do with respect to the operation of the galley range?
8. What does a Ship's Cook 2c need to know about the temperatures required for the storage of provisions?
9. What are the immediate duties of a Ship's Cook 2c when provisions are delivered aboard?

CHAPTER 2

THE GENERAL MESS

1. Who is responsible for the preparation of the weekly bill-of-fare?
2. Who must finally approve the weekly bill-of-fare?
3. If there is no regular supply officer aboard, what is done to provide for the performance of the supply officer's duties?
4. Give two responsibilities of the medical department in connection with provisions and storerooms for the general mess.
5. What are the two most important duties of the jack of the dust?
6. What should you do with "blown" cans?

7. When you are finished with the keys to the storerooms, what should be done with them?
8. How does the supply officer know the number of men to be fed each day?
9. Aboard ship, who is responsible for keeping the mess gear in good shape?

CHAPTER 3

INSPECTING PROVISIONS

1. What is the purpose of the number on the Department of Agriculture meat inspection stamp?
2. Into what three cooking groups is frozen beef divided?
3. What are the three bases for grading meats?
4. What is the color of good veal?
5. What are the most common cuts of fresh pork?
6. What grade and size of potatoes are most suitable for use aboard ships?
7. What is the minimum acceptable length for carrots?
8. How can you detect decay on egg plant?
9. What is the limiting size for acceptable strawberries?
10. Only live oysters should be used for food. How can you tell if oysters are dead?

CHAPTER 4

STORING PROVISIONS

1. If your storeroom contains flour that was procured at different times, which flour should be used first?
2. What poison is used to eliminate roaches and water bugs?
3. Why should a liquid container with a cork stopper be stowed on its side?
4. Why should coffee be kept away from freshly painted places?
5. In what temperature range should the butter and egg box be kept?
6. Why should granulated sugar be stowed where the temperature is less than 80° F.?

7. At about what temperature should the chill room be kept?
8. Why should cucumber pickles be stowed away from the light?
9. Why is it bad to stow bananas in the refrigerator?
10. Why should the vegetables in a locker be sorted often?
11. Should large pieces of frozen meat be thawed quickly at high temperatures or slowly at lower temperatures?
12. What's the chief advantage of dehydrated products?

CHAPTER 5

ISSUE AND DISPOSAL OF PROVISIONS

1. 'What form is used to order provisions from the bulk storeroom?
2. Six pounds of sugar is needed to make enough chocolate for 100 portions. How much is needed for 75 portions?
3. Forty pounds of halibut steaks are needed for 100 portions. How many pounds are needed for 225 portions?
4. Forty-two pounds of boneless beef are needed for 100 portions of roast beef. How many pounds are needed for 825 portions?
5. One hundred twenty-five pounds of dressed frying chickens are needed to prepare 100 portions of fried chicken. How many pounds are needed for 2,150 portions?
6. If wheat flour costs \$.029 per pound, what is the total cost of 1,450 pounds?
7. If the total cost of provisions used in a day is \$216.90, what is the ration cost if 326 men are being subsisted?
8. What form is used to keep track of quantities of provisions in the bulk storeroom?
9. Frozen beef for stewing or boiling should be sold to special messes at 90 percent of the average cost of all frozen beef. If the average cost of frozen beef is \$.23 per pound, how much should be charged for the stewing and boiling beef?
10. What should be done when spoiled provisions are discovered?

CHAPTER 6

FOOD—WHAT IT IS

1. Which have the most calories per pound—carbohydrates, fats, or proteins?
2. Which is best for building up your muscles—carbohydrates, fats or proteins?
3. Which of the following foods is best for furnishing carbohydrates—fish, meat, or potatoes?
4. Which of the following foods is best for furnishing proteins—cereals, meat or potatoes?
5. What two parts of your body have the most need for calcium and phosphorus?
6. Which of the following foods is best for furnishing calcium—meat, milk, or oranges?
7. What part of your body has the most need for iron?
8. Which of the following foods is the best iron provider—eggs, oranges, or potatoes?
9. What disease does vitamin C prevent?

CHAPTER 7

MENU PLANNING

1. If you're serving a heavy meal, should the soup be light or heavy?
2. Butter is particularly good for supplying one of the vitamins. Which vitamin is this?
3. Meat supplies large amounts of two vitamins. Which two vitamins are these?
4. Where can you find the amount of the ration limit placed on your ship?
5. How many meals are included in one Navy Ration?
6. If you're following the Navy Ration and plan to serve fresh meat, how much meat should you plan to prepare for each man for one day?
7. What season of the year is best for serving hot soups, roasts, and heavy puddings?

8. Tomatoes supply a large amount of one of the vitamins.
Which vitamin is this?
9. How much sugar is indicated in the Navy Ration?

CHAPTER 8

GALLEY AND BUTCHER SHOP EQUIPMENT

1. Why should the bowl on an electric mixer never be filled more than half-full?
2. Why should potatoes remain in the potato peeler only a very short time?
3. What should you use to force the meat into the hopper of the electric meat grinding machine?
4. What valve should be opened just before the steam valve is opened on the steamer?
5. What device enables you to control the heat of an electric oven?
6. What electric switch should be pulled when the electric range is not in operation?
7. How tight should the saw blade on an electric saw be adjusted when the saw is being used?
8. What two things should you use to clean the meat block?
9. Why should you remove the ice that accumulates on the coils of the refrigerator?

CHAPTER 9

CUTTING MEAT THE NAVY WAY

1. When you're cutting up a beef hindquarter, which part is removed first?
2. For what should the boneless hanging tender of beef be used?
3. For what should the beef tenderloin be used?
4. What use can you make of beef bones?
5. When the beef forequarter is hung up properly, is the arm and shank toward the bottom or toward the top?
6. Why should you stick a boning knife between the 5th and 6th ribs when you cut the beef forequarter?

7. For what should the beef chuck tender be used?
8. Which carcass is best for cutting into chops—beef, lamb, or veal?

CHAPTER 10

WHAT'S COOKING

1. What do you have to do to the soup stock in order to get a clear soup?
2. What do you have to add to soup stock in order to get a cream soup?
3. Why should only thick slices of meat be broiled?
4. How much fat is used when you griddle broil meat?
5. What kind of meat should never be used in stews?
6. Why should the meat in a stew be cooked for a while before the vegetables are added?
7. What must be done to dehydrated vegetables before they are cooked?
8. Should cold or hot water be used for refreshing vegetables?
9. How can you tell when vegetables have been cooked long enough?
10. Why should tea that is to be iced be made a little stronger than the tea that is to be served hot?

CHAPTER 11

THE ARITHMETIC OF RECIPES

1. What do you multiply by in order to change the unit of measure from cups to tablespoons?
2. What do you multiply by in order to change pounds to ounces?
3. Each of the *Navy Cook Book* recipes is made out for how many portions?
4. What fractional part of the *Navy Cook Book* recipe would you use for 75 portions?
5. What fractional part of the *Navy Cook Book* recipe would you use for 10 men?

6. How many dozen eggs in a case?
7. The *Navy Cook Book* recipe for chicken croquettes calls for 25 eggs. How many eggs would you use for 733 portions?
8. The *Navy Cook Book* recipe for oven broiled mackerel calls for $\frac{3}{4}$ of a tablespoon of pepper. How much pepper would you use for 1,875 portions?

CHAPTER 12

BAKING

1. Which ingredient makes bread dough light and porous?
2. Which ingredient helps to control fermentation of bread dough?
3. What's the purpose of pushing your fingers into the bread dough and then quickly withdrawing them?
4. Which part of the dough loaves should face the bottom of the pan?
5. At what temperature should bread be baked?
6. What color is the crust of good Navy bread?
7. What process makes sponge cakes light?
8. What type of icing cannot be stored for any length of time?
9. Why is it necessary to slit the upper crust of a two crust pie?
10. What ingredient is most important in making good meringue?
11. What should be done with new pans before using them to bake cookies?
12. How does too much sugar or richness affect cake doughnuts?

CHAPTER 13

DISHING IT UP

1. What condiment can be added to mashed potatoes or potato salad in order to give the food a little color?
2. Should liver and bacon be served separately or together?

3. Why is it well to keep the food trays in a warm place before food is placed in them?
4. What's the main purpose of garnishing food?

CHAPTER 14

SOMETHING ABOUT POISONS

1. Food poisoning is caused by bacteria, chemicals, and poisonous plants or animals. Which of these is the chief source of food poisoning?
2. Does food usually become spoiled before or after it is cooked?
3. What is the 4 hour rule?
4. Do dehydrated foods spoil most easily before or after they have been reconstituted?
5. Why should you never taste canned foods that don't look right?
6. What causes cadmium poisoning?
7. How much danger from poisoning is there in using tin or aluminum food containers?
8. If you're in a strange country, how can you be fairly sure that strange plants and animals are safe to eat?
9. When preparing a pork dinner, how can you prevent trichinosis?
10. What are the upper and lower limits of the best growing temperatures for bacteria?

CHAPTER 15

LANDING FORCE COOKING

1. What standard publication gives you information about first aid?
2. Why should straw be mixed in with the mud when you're building a mud oven?
3. Why should a fire be burned in a hole in a bank oven before the oven is used?

4. What kind of bread can most easily be baked in outside ovens?
5. Who should inspect fresh provisions that may be available ashore?
6. What can be used instead of soup stock for making good soups?
7. For what is the Lyster bag used?
8. Why isn't heat a practical way to purify water?
9. How should garbage be disposed of in the field?

ANSWERS TO QUIZ

CHAPTER I

FOOD FOR THOUGHT

1. Yes! A Ship's Cook 3c should know the complete organization of the general mess of his ship or station.
2. In order to qualify for the rating of Ship's Cook 3c, an examining board may ask you to prepare four dishes including meat, a vegetable, and dessert.
3. A Ship's Cook must know the regulations for taking provisions from the storerooms, because he must obtain the provisions for the galley from the storerooms.
4. A Ship's Cook should be able to plan menus for a week in advance.
5. Standard Navy recipes can be found in the *Navy Cook Book*.
6. A Ship's Cook should be able to tell the names, locations, and proper uses of various cuts of meat.
7. A Ship's Cook should be able to start, secure, and clean the galley range.
8. A Ship's Cook 2c should know the desirable temperatures in the storage rooms for the preservation of different types of provisions.
9. A Ship's Cook 2c must supervise the delivery, inspection, and storage of provisions.

CHAPTER 2

THE GENERAL MESS

1. The chief commissary steward is responsible for the preparation of the weekly bill-of-fare.
2. The commanding officer gives final approval to the weekly bill-of-fare.
3. When there is no regular supply officer aboard, the commanding officer appoints a line officer to perform the duties of supply officers.

4. Some one from the medical department makes quality inspections of provisions delivered to the ship's galley and storeroom inspections are also made.
5. The jack of the dust orders provisions for the issue room. He also issues these provisions as needed.
6. Blown cans should be put aside until they can be surveyed.
7. The keys to the storerooms should always be returned to the supply office.
8. The executive officer notifies the supply officer every day as to the number of men to be fed that day.
9. The first lieutenant is responsible for keeping the mess gear in good shape.

CHAPTER 3

INSPECTING PROVISIONS

1. The number on the meat inspection stamp is the number of the packing plant at which the meat was processed.
2. Frozen beef is divided into three cooking groups—beef suitable for roasts and frying, beef suitable for boiling and stewing, and beef suitable for ground meat dishes.
3. Meat grading is based on conformation, finish, and quality.
4. Good veal has a light brownish pink color.
5. The most common cuts of fresh pork are loins, shoulders, hams, and spareribs.
6. No. 1 Grade, Size A potatoes are best for shipboard use.
7. Carrots acceptable for Navy use must be at least 3 inches long.
8. Decay appears on egg plant as dark brown spots.
9. Strawberries must be at least $\frac{3}{4}$ of an inch thick to be acceptable.
10. The shells on dead oysters are open and gaping.

CHAPTER 4

STORING PROVISIONS

1. The oldest stock of flour should be used first.
2. Commercial sodium fluoride is used to get rid of roaches and water bugs.

3. Corks will not dry out if the containers are laid on their sides.
4. As coffee absorbs paint odors easily, it should be kept away from freshly painted places.
5. The temperature of the butter and egg box should be from 30° to 32° F.
6. Granulated sugar sweats and becomes hard at temperatures over 80° F.
7. The vegetable or chill room should be kept around 45° F.
8. Light destroys the coloring of cucumber pickles.
9. Bananas blacken and spoil if kept in the refrigerator.
10. Vegetables should be sorted frequently so the spoiled ones may be removed before the spoilage spreads.
11. Large pieces of frozen meat should be thawed slowly at about 45° F. so the outside will not spoil before the inner part is completely thawed. At high temperatures the outside meat will spoil quickly.
12. The chief advantage of dehydrated products is in the saving of space.

CHAPTER 5

ISSUE AND DISPOSAL OF PROVISIONS

1. Provisions are ordered from the bulk storeroom by means of stub requisitions.
2. Four and one-half pounds of sugar are needed to make 75 portions of chocolate.
3. Ninety pounds of halibut steaks are needed for 225 portions.
4. About 329 pounds of boneless beef will be needed for 825 portions.
5. About 2,419 pounds of dressed frying chickens are needed for 2,150 portions.
6. The total cost of 1,450 pounds of wheat flour at \$.029 per pound is \$42.05.
7. The ration cost is \$.6653.

8. Stock tally cards are used in the bulk storeroom to keep track of the provisions.
9. The frozen beef for stewing and boiling should be charged at \$.21 per pound, if the average cost of all the frozen beef is \$.23 per pound.
10. Spoiled provisions should be laid aside for a survey.

CHAPTER 6

FOOD—WHAT IT IS

1. Fats have the most calories per pound.
2. Proteins are best for building up your muscles.
3. Potatoes are better than fish or meat for furnishing carbohydrates.
4. Meat is better than cereals or potatoes for furnishing proteins.
5. Your bones and teeth need calcium and phosphorus.
6. Milk is better than meat or oranges for furnishing calcium.
7. Your blood needs iron in order to develop the red coloring matter.
8. Eggs are better than oranges and potatoes for furnishing iron.
9. Vitamin C prevents scurvy.

CHAPTER 7

MENU PLANNING

1. If you're serving a heavy meal, the soup should be light.
2. Butter is particularly good for supplying vitamin A.
3. Meat supplies large amounts of thiamin and riboflavin.
4. You can find the ration limit for your ship in the *BuSandA Manual* or in the *BuSandA Memoranda*.
5. One Navy ration includes 3 meals.
6. Plan to prepare 20 ounces of fresh meat.
7. The cold weather season is best for serving hot soups, roasts, and heavy puddings.

8. Tomatoes supply a large amount of vitamin C.
9. Five ounces of sugar is listed in the Navy Ration.

CHAPTER 8

GALLEY AND BUTCHER SHOP EQUIPMENT

1. A heavier load may burn out the mechanism.
2. More than just the peelings will be removed if the potatoes are allowed to remain in the machine very long.
3. The meat should be forced into the hopper with a wooden plunger.
4. The exhaust valve should be opened before the steam valve is opened.
5. The heat of the oven is controlled by a thermostat.
6. The main switch should be pulled when the electric range is not in operation.
7. When the saw is being used, the saw blade should be tightened only enough to keep it from slipping.
8. The meat block should be cleaned with a scraper and wire brush only.
9. The ice acts as an insulator and keeps the refrigerator from cooling properly.

CHAPTER 9

CUTTING MEAT THE NAVY WAY

1. The flank is removed first from the beef hindquarter.
2. The boneless hanging tender of beef is used for stewing and grinding.
3. Beef tenderloin is used for steaks or roasts.
4. Beef bones can be used for soup stock.
5. The arm and shank is toward the bottom when the beef forequarter is hung up properly.
6. The boning knife serves as a guide for cutting.
7. The beef chuck tender is good for braising.
8. Lamb is better than beef or veal for cutting into chops.

CHAPTER 10

WHAT'S COOKING

1. Clear soup is prepared by straining the soup stock.
2. Cream soups are made with hot milk.
3. Thin slices of meat get done clear through before the outside gets browned.
4. No fat is used in griddle broiling.
5. Never use pork in stews.
6. Vegetables should be added to stews after the meat has been partly cooked so that the meat and vegetables will be done at the same time.
7. Dehydrated foods must be reconstituted before they are cooked.
8. Wilted vegetables can be refreshed by placing them in ice cold water.
9. When vegetables are tender, they have been cooked long enough.
10. The addition of ice makes the tea weaker.

CHAPTER 11

THE ARITHMETIC OF RECIPES

1. Change cups to tablespoons by multiplying the number of cups by 16.
2. Change pounds to ounces by multiplying the number of pounds by 16.
3. Each *Navy Cook Book* recipe is made out for 100 portions.
4. Three-fourths of a *Navy Cook Book* recipe should be used for 75 portions.
5. One-tenth of a *Navy Cook Book recipe* should be used for 10 men.
6. There are 30 dozen eggs in a case.
7. Fourteen and one-half dozen eggs should be used for 733 portions of chicken croquettes.
8. Twelve and one-half tablespoons of pepper should be used for 1,875 portions of oven broiled mackerel.

CHAPTER 12

BAKING

1. The yeast makes the bread dough light and porous.
2. Salt helps control the fermentation of the bread dough.
3. If the dough falls away when you remove your fingers, it is ready for the punch.
4. The loaves should be placed in the pans so that the molding seams face the bottom of the pan.
5. Bread should be baked at temperatures between 375° F. and 450° F. depending on the size of the loaf.
6. The crust on good Navy bread is golden brown.
7. Sponge cakes are made light through the beating of the eggs and sugar.
8. Marshmallow icing cannot be stored for any length of time.
9. Slits are made in the upper crust of a pie to permit the escape of steam when the pie is baking.
10. Using plenty of egg whites is the secret of a good meringue.
11. New pans should be lightly greased and then baked in a hot oven for about 4 hours before they are used for baking.
12. Too much sugar or richness makes cake doughnuts greasy.

CHAPTER 13

DISHING IT UP

1. A little paprika sprinkled over mashed potatoes or potato salad adds color.
2. It's better to serve liver and bacon together.
3. The food stays warmer longer if it is placed in hot trays.
4. Garnishing helps make the food attractive.

CHAPTER 14

SOMETHING ABOUT POISONS

1. Bacteria are the main source of food poisoning.
2. When food becomes spoiled, the spoilage usually occurs between the time it is cooked and the time it is eaten.
3. The 4 hour rule states that food should always be served within 4 hours from the time it is cooked.
4. Dehydrated foods spoil most easily after they have been reconstituted.
5. A taste of poisonous canned food might cause death or serious illness.
6. Cadmium poisoning occurs sometimes when food has been prepared in a cadmium plated utensil.
7. Tin or aluminum food containers do not cause poisoning.
8. Strange plants and animals should be eaten only when the natives of the area in which the foods are found eat them.
9. Always prepare pork well done in order to prevent trichinosis.
10. Bacteria grow best at temperatures between 65° F. and 115° F.

CHAPTER 15

LANDING FORCE COOKING

1. The *Bluejackets' Manual* contains information about first aid.
2. The straw helps hold the mud together.
3. The fire dries out the oven and makes it usable.
4. Field bread is the type of bread most easily baked in an outside oven.
5. Fresh provisions should always be inspected by the medical department before the provisions are used.
6. Roux can be used instead of stock as a base for soup when soup stock is not available.
7. The Lyster bag is a device used to make water safe for drinking.
8. Purifying water by heat takes a long time and uses up a large amount of fuel.
9. Garbage should be burned or buried—preferably burned.

QUALIFICATIONS FOR SHIP'S COOK 3c

(A) PRACTICAL FACTORS

- (a) D-5204, (1). (Primary requirements of all petty officers.)
- (b) GALLEY RANGE—Demonstrate ability to start, operate, secure and clean galley range in own ship or station.
- (c) WATCH STANDING—Demonstrate ability to stand watch in the galley in own ship or station.
- (d) MECHANICAL APPARATUS — Demonstrate ability to start, operate, stop, and clean all mechanical apparatus used in the preparation of food in own ship or station.
- (e) CUTS OF MEAT—Demonstrate ability to cut meat properly for its various uses.
- (f) FOOD PREPARATION—Demonstrate ability to prepare food for cooking and to supervise food preparation. Demonstrate ability to prepare, cook, and serve any four dishes selected by examining board, including a vegetable, meat, and dessert.

(B) EXAMINATION SUBJECTS

- (a) SANITARY PRECAUTIONS—Know the sanitary precautions to be observed by commissary personnel in the stowage, preparation and issue of food.
- (b) CARE OF EQUIPMENT—Know the routine to be observed for the maintenance and proper sanitary condition of refrigerators, vegetable lockers, meat blocks, etc.
- (c) ORGANIZATION—Know the organization of the general mess in own ship or station.
- (d) REGULATIONS—Know the regulations regarding the withdrawal of provisions from N. S. A. storerooms.
- (e) FOOD THEORY—Know the classes and groups into which foods are divided and the function of each in a diet. Know the function of vitamins and their source in various foodstuffs.
- (f) MENUS—Prepare a menu for one week illustrating a properly balanced diet, and using the foodstuffs

normally found on board ship. (Examining board will indicate the season and the location of the ship).

- (g) CUTS OF MEAT—Indicate on a quarter of beef and a side of veal the names, location, and proper uses of the various cuts of meat.
- (h) D-5203. (Fundamental knowledge required of all men in the Navy.)

QUALIFICATIONS FOR SHIP'S COOK, 2c

(A) PRACTICAL FACTORS

- (a) CUTS OF MEAT—Demonstrate ability to cut meat properly and economically for its various uses.
- (b) SUPERVISION—Demonstrate ability to supervise the delivery, inspection and storage of provisions and fresh meats.
- (c) D-5210.01 (1) (A). (Practical factors for Ship's Cook 3c.)

(B) EXAMINATION SUBJECTS

- (a) BILLS-OF-FARE—Be able to plan and prepare bills-of-fare.
- (b) ORDERING AND COSTS—Given a sample bill-of-fare for a week's period, compute the quantity and cost of each item and the cost of the ration per man for that period. (Examining board will provide a copy of current contract prices.)
- (c) REGULATIONS—Be familiar with the regulations and instructions with regard to the Navy ration, surveys, and sales to messes.
- (d) KEEPING QUALITIES—Know the keeping qualities of the various kinds of provisions.
- (e) STORAGE TEMPERATURES—Know the storage temperatures of the various kinds of provisions.
- (f) RECIPES—Be familiar with standard Navy recipes.
- (g) D-5210.01 (1) (B). (Examination subjects for Ship's Cook 3c.)

TRAINING FILMS RECOMMENDED
FOR
COOKS AND BAKERS

- MA-3817 Conservation of Food (*15 min.*)
A general film touching sanitation in the galley and mess hall; the importance of proportioning the amount of food to the number of men, weather conditions, and the type of work going on; stowage of food; proper methods of serving food; and the use of leftovers.
- MA-2220 The Fly (*14 min.*)
The life cycle of the fly, how it spreads disease, and how cleanliness assists in controlling flies.
- MA-2511A The Army Cook, Part I—Meat Cutting Tools and Equipment (*20 min.*)
Sharpening, cleaning, and stowing knives and blocks, boning meat, and cutting pork chops and steaks.
- MA-2511B The Army Cook, Part II—Cutting a Hindquarter (*13 min.*)
Removal of the kidney, knuckle, heel, round, tenderloin, sirloin, rump butt, and loin strip from a hindquarter of beef.
- MA-2511C The Army Cook, Part III—Cutting a Forequarter (*17 min.*)
Removal of the shank, shoulder cut, chuck tender, boneless inside chuck, boneless neck, and brisket rolls from a forequarter of beef.
- MA-2511D The Army Cook, Part IV—Cutting Lamb (*14 min.*)
Boning, rolling, and tying the various cuts of lamb for roasting.
- MA-2511E The Army Cook, Part V—Cutting Veal and Pork (*13 min.*)
Removal of kidneys, tenderloin, short loin, sirloin, rump and other parts of a side of veal; identification of the various cuts of pork.

MA-2822A Baking In The Field, Part I—The M1942 Field
 Baking Unit (28 *min.*)

Although this film illustrates the use of army gear, the emphasis on precise measurement of ingredients, proper time and temperature, and the appearance of dough in various stages of preparation and baking are considered valuable training material. If preferred, the first part of this film may be omitted.

MA-2511F The Army Cook, Part VI—Cooking and Carving
 Meat (18 *min.*)

Preparation of beef stew, braised beef, sausages, bacon; testing temperature of fat; carving various cuts of meat.

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